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Journal of Economic and Social Studies (JECOSS) aims to develop scientific knowledge in the areas that include, and are related to Economics, Management, Financial Economics and Banking, Accounting, Marketing, Quantitative Methods and Econometrics, International Relations and Policy Development. As an international social sciences journal with interdisciplinary feature, it will set a ground to bring social science communities across disciplines identified above with a view for sharing information and debate. The journal publishes refereed articles and technical research notes that build on theory and contemporary scientific knowledge. Articles submitted to JECOSS will be peer-reviewed and expected to report previously unpublished scientific work. Submitted manuscripts should follow journal format and referencing guide and should not be under consideration elsewhere.

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Investigating Croatian Inflation through the Cointegration with Structural Break Approach

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Abstract: *This paper analyses the inflationary process in Croatia during the period 1992-2011, using a cointegration with structural break approach. Our results indicate that there is a long-run relationship between inflation, exchange rate, unit labour costs and money growth. Currency depreciation and unit labour costs are found to influence inflation positively, and money supply negatively. We argue that the latter occurs because exchange rate targeting policy in Croatia results in a situation where endogenous money moves in the direction opposite to the exchange rate, so as to keep the exchange rate fixed. We, furthermore provide some evidence that money supply need not mean risks to inflation in the presence of declining money velocity.*

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Introduction

Relatively low and stable inflation has been a characteristic of Croatian economy for almost twenty years. There is a rare agreement among the economists about the necessity of achieving price stability at a low level and it is widely accepted that inflationary environment is detrimental to growth, employment and even happiness. Investigating the inflation process in any country is important for several reasons: firstly, low inflation improves resource allocation and financial stability; secondly, low inflation rate (the one in line with the Maastricht criterion) is one of the prerequisites for joining the Euro Area and thirdly, in order to be able to keep inflation at the desired level central banks have to be familiar with the inflation generation process. Given the importance of inflation and its relationship with other variables in the economy, one of the main aims of this paper is to analyse the inflationary process in Croatia in the longest available period: 1992-2011.

Croatian inflation has not been investigated sufficiently, and the whole period for which the data exists has never been analysed. Namely, the early transition period is often excluded from empirical analyses mainly due to the fact Croatia, like most other transition countries, had only just established an independent bureau of statistics in those years. Therefore, the data from this period is often considered to be unreliable; alternatively it is unobtainable. Furthermore, this was a turbulent period and stabilisation programmes, adopted in most countries at the beginning of transition, represented a clear structural break in a number of data series. Since the procedures that account for structural breaks are computationally more complex, these periods are often excluded from the analyses and structural breaks are ignored.

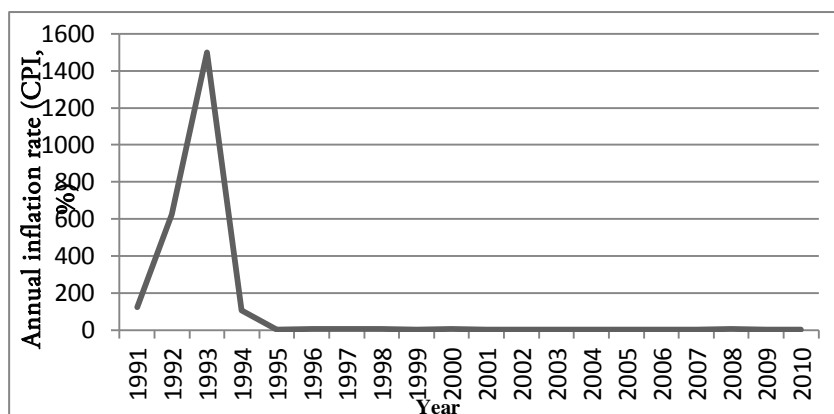
In spite of these problems we believe that it is important to account for the early period in the analysis, as it offers important explanations of the current inflation generating process in Croatia (as explained in more detail in Section 2). Namely, the Stabilisation Programme adopted in 1993 brought hyperinflation in Croatia to a halt using the exchange rate anchor, and the public in Croatia still perceives the association between the exchange rate movements and the inflation rate as to follow the same direction. Furthermore, the use of the pre-Stabilisation data in combination with the latest available data permits, for the first time, an assessment of Croatian inflation in the long-run (20 years). Finally, we use a cointegration in the presence of a structural break approach as a methodology that fits the data for Croatia in the period under investigation best. This methodology is relatively novel, and has not been used before for analysing inflation, to the best of our knowledge.

The paper is organised as follows: Section 2 gives an overview of the inflationary dynamics in Croatia since the 1990s, given that the roots of today's monetary policy in Croatia can be found in the early transition period. Section 3 reviews the literature on inflation determinants in transition economies focusing particularly on the (scarce) literature investigating Croatian inflation. Section 4 gives a theoretical model of inflation, which is based on the three hypothesis of inflation determination: excess money supply, foreign inflation and cost-push inflation. Section 5 discusses methodological issues. More precisely, data issues are first examined, since the inclusion of the early period warrants this; unit roots are investigated next, using the approach that accounts for structural breaks, and finally, cointegration with structural breaks methodology is applied to the data to assess the long-run relationships between the variables in the model. Section 6 discusses the obtained results at length and offers explanations for, what can at first be interpreted as, somewhat atypical findings. Section 7 undertakes a number of robustness checks, while Section 8 assesses whether conventional conclusions about the sources of Croatian inflation still prevail.

A History of Croatian Inflation

Croatia has been very successful at restraining inflation in the early 1990s as can be seen from Figure 1.

Figure 1. Annual Inflation (CPI based) in Croatia in 1990-2010



Source: *International Financial Statistics*

The outburst of hyperinflation at the beginning of Croatian transition, when annual inflation reached levels above 1500 percent, can be attributed to several factors. The initial outbreak of inflation was due to price liberalisation, which led to a one-time adjustment of previously repressed prices, and monetary overhang and fiscal deficit inherited from the previous regime (ex-Yugoslavia). The fiscal deficit additionally expanded due to war financing, inability to borrow money in international markets and a lack of international reserves, as well as quasi-fiscal deficits, in the form of government subsidies. This led to more money creation and further fuelled inflation, thus contributing to inflation persistence. Wage pressures (through indexation) as well as relative price adjustments (through cost-recovery hypothesis and the Balassa-Samuelson effect) also contributed to inflation persistence. As can be seen from Figure 1, Stabilisation Programme adopted in October 1993 managed to lower inflation to a single-digit number, and it was kept at relatively low levels ever since (Figure 2). This is considered one of the major economic achievements of the transition period.

Figure 2. Annual Inflation (CPI based) in Croatia in 1995-2010



Source: *International Financial Statistics*

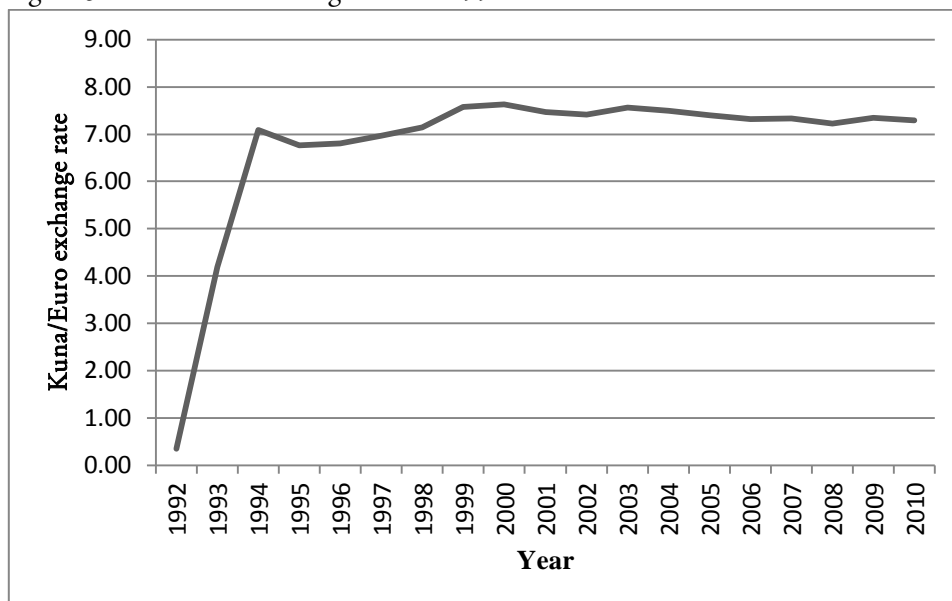
The degree of currency and asset substitution in Croatia was already high at the beginning of 1990s as a result of inflationary history in 1970s and 1980s when Croatia was still part of Yugoslavia. Indexation to exchange rate was omnipresent; even the communal services used indexation. Croatian citizens had substantial holdings of foreign exchange and depressed domestic currency incomes. Inflationary expectations were closely tied to exchange rate depreciation. Furthermore, an important factor was previous negative experience with high inflation levels, so people were very sensitive to changes in the exchange rate and as a consequence, reacted to these changes.

The Stabilisation Programme adopted in October 1993 was exchange rate based. The key element of the Programme was the introduction of the current account convertibility. This enabled citizens to convert domestic currency into foreign currency (and vice versa) at any time (Kraft, 2003). Croatian citizens and companies were in need of local currency, caused by domestic money supply tightening in months prior to the Programme. Current account convertibility enabled them to achieve liquidity by exchanging foreign currencies for local cash (Kraft and Franicevic, 1997). The exchange rate was pegged to the German mark (DM) and Croatian National Bank (CNB) announced the upper intervention point of 4444 Croatian dinars (HRD, Croatian currency at that time) for 1 DM in October 1993. A new foreign exchange law was also adopted in October. Under this law banks could freely set their exchange rates (Sonje and Skreb, 1997). Right after the implementation of the Stabilisation Programme there was an extremely high growth of cash as the central bank worked within the previously set quantitative limits. Since the central bank did not allow new credits in domestic currency to the commercial banks, and since it was no longer buying foreign currency, this unexpected and high cash growth totally exhausted commercial banks' liquidity (Anusic, 1995). Commercial banks, headed by Varazdinska banka (medium-sized bank) started offering foreign currency at lower exchange rates to attract domestic currency and increase liquidity. Namely, they started asking 4200 Croatian dinars for one German mark, which was below black market rate at the start of the anti-inflation programme. Later on, as the banks tried to discourage households from exchanging their foreign currency reserves for domestic money, they lowered the exchange rate even more, and required 3800 Croatian dinars for one DM. This turned the tide of expectations and increased the trust in the Stabilisation Programme (Babic, 1998). Due to serious monetary tightening and increasing confidence in domestic currency, as well as the new exchange rate regime and new foreign currency market

arrangements, dinar started appreciating (reverse currency substitution), and returned to the pre-stabilisation level of 3708.8 dinars for one DM (Nikic, 2000). Thus, the credibility of the Programme was established.

As can be seen from Figure 3, the exchange rate remained relatively stable ever since (that is, after 1994).ⁱ

Figure 3. Kuna/euro Exchange Rate in 1992-2010



Source: Croatian National Bank

The exchange rate regime in Croatia is a managed float, with fluctuations in the range of +/-6 percent. In cases when foreign currency supply is above demand, CNB intervenes by increasing international reserves, and in times of increased demand it sells foreign currency, thus preventing extra depreciation. The central bank, thus, by setting the exchange rate as an intermediate target, renounces of monetary policy independent from the one in the anchor country. This means that the money supply in the domestic country becomes endogenous variable determined by the money supply in the anchor country. In such situations, as noted by Egert and MacDonald (2008), exchange rate changes provide a nominal anchor for expectations, as they may signal changes in prices. Therefore, a large(r) pass-through effect can be expected for countries with an accommodative monetary policy. Interestingly, Billmeier and Bonato (2004) find that exchange rate pass-through has been low in Croatia in the period 1994-2001. Kraft (2003) also finds the level of pass-through in Croatia to be modest.

Literature Review

This section reviews the literature that deals with the determinants of inflation in transition economies and especially Croatia. In the first part we briefly summarise the main findings of various papers on this topic, while the second part consists of a more detailed assessment of selected papers. The papers selected for the second part are those that investigate determinants of Croatian inflation, since presenting all the papers assessing inflation in transition economies would be an impracticable task.

In most studies that analyse inflationary processes in transition countries money growth is found to be the main driving force behind inflation. This holds in: Albania (Haderi et al., 1999), Russia (Nikolic, 2000), Slovenia (Ross, 2000) and in Czech Republic, Hungary and Poland (Brada and Kutun, 2002). The exchange rate seems to exert a notable impact on inflation in Poland (Golinelli and Orsi, 2001), Czech Republic and Hungary (Golinelli and Orsi, 2001), Slovenia (Ross, 2000) and in the three Baltic states (Masso and Staehr, 2005). Finally, wages are found to be an important determinant of inflation in Slovenia (Festic, 2000; Ross, 2000). Next we present the papers analysing Croatian inflation in more detail. Table 1 summarises these papers and gives their main conclusions, while a more detailed analysis is given below the table.

Table 1. Literature Review

Author(s)	Period	Data	Methodological approach	Main determinants
Payne (2002)	Jan1992- Dec1999	Monthly	VAR	Wages, exchange rate
Botric and Cota (2006)	Jan1998- Mar2006	Monthly	VAR; SVAR	Wages, exchange rate
Vizek and Broz (2009)	1995Q1- 2006Q2	Quarterly	Cointegration	Mark-up, excess money, exchange rate and output gap
Malesevic Perovic (2009)	Jun1994- Jun2006	Monthly	Cointegration	Wages, exchange rate
Dolezal (2011)	Jan1998- Nov2010	Monthly	Cointegration	Money, exchange rate

Payne (2002) analyses the inflationary process in Croatia for the period January 1992 - December 1999 using a vector autoregression (VAR) approach. His results

suggest that inflation is positively influenced by wage growth and currency depreciation. Money and lagged values of inflation seem not to affect present inflation.

Botric and Cota (2006) analyse sources of inflation in Croatia in the period January 1998 – March 2006. They use two approaches. In the first one they estimate a structural VAR (SVAR), following Dibooglu and Kutan (2005), while in the second approach they replicate Payne's (2002) unrestricted VAR using the data from a later period. The results of their estimated SVAR indicate that terms of trade and balance of payment shocks are the most important factors generating inflation. In their unrestricted VAR analysis they find, similar to Payne, that the exchange rate and wage growth are important determinants of inflation. In addition, their results point toward a significant positive effect of monetary growth on inflation. Variance decompositions furthermore suggest that there is some degree of inflation inertia in the system, which was not, as they note, found by Payne. Botric and Cota explain their variance decompositions as indicating that the inflation process has changed, whereby wage growth has lost its strength in explaining inflation.

VAR analysis has been widely adopted for analysing inflationary dynamics. However, when cointegration relations are present in the system of variables, the VAR form is not the most suitable model setup, since the model is in this case misspecified. Stationarity and cointegration testing should, therefore, be the starting point of any such analysis. This has been done, to the best of our knowledge, in only three papers.

Vizek and Broz (2009) use the cointegration approach and analyse Croatian inflation in the period Q1 1995 – Q2 2006. They show that the short-run behaviour of inflation is best explained via mark-up and excess money. Additional sources of the short-run inflation include: output gap, nominal effective exchange rate, import prices, interest rates and narrow money. In the long-run, mark-up, excess money, nominal effective exchange rate and the output gap are found to be the key determinants of inflation. An unusual finding is that currency depreciation affects prices negatively. The authors argue that, in the Croatian 'fear of floating' context, it might mean that monetary policy reacts excessively to depreciation pressures thus causing price contractions.

Malešević Perović (2009) analyses the determinants of inflation in Croatia in the period June 1994 – June 2006 through a cointegration approach. She finds wage growth and currency depreciation to be the main driving forces behind inflation in

the period under investigation. Money is found not to be important in explaining Croatian inflation, and this is used as a confirmation of money endogeneity to exchange rate targeting.

Finally, Dolezal (2011) uses the period January 1998 – November 2010, and in his analysis of the monetary transmission mechanism in Croatia concludes, among other things, that there exists a cointegrating relationship between the real exchange rate, money (M1) and inflation. However, the signs on all the variables in his model are the opposite of expectations (theory).

Cointegration approach, although more appropriate than VAR, has a drawback in the sense that it should be applied to long(er) samples, and the period 1995-2006 (used by Vizek and Broz, 2009), 1994-2006 (used by Malešević Perović, 2009) and 1998-2010 (used by Dolezal) cannot really be considered a long-run. By using the latest available data (up till September 2011) and merging them with the earliest available period (pre-June 1994) we were able to create, for the first time, a sample of 20 years of monthly observations on inflation in Croatia, which can be considered a long-run.

Theoretical Approach

A commonly used model (see, for example, Ross, 2000; Payne, 2002; Botrić and Čota, 2006; Malešević Perović, 2009) for analysing inflation is the one developed by Bruno (1993). In this model the main determinants of inflation (π) are wage growth (w), exchange rate changes (ε) and money growth (μ), or more formally:

$$\pi = \alpha_1 w + \alpha_2 \varepsilon + \alpha_3 \mu + v \quad (1)$$

where v represents supply and demand shocks.

Wages may influence inflation through two main channels. The first one is on the supply side, through increased production costs, while the second one is on the demand side, through increased demand for final goods. However, since the former is true only if nominal wage increases are in excess of productivity increases, it would be more desirable to use unit labour costs (ULC) as a determinant of inflation. This is what we do in our analysis.

The impact of exchange rate on inflation works through both: aggregate demand and aggregate supply side. On the aggregate demand side domestic currency depreciation can add up to inflation through its positive effect on price competitiveness of the country, thereby increasing aggregate demand and inflation. On the supply side currency depreciation raises the domestic prices of imported goods, thus contracting the aggregate supply, reducing output and increasing inflation.

Finally, increases in money supply generally lead to increases in aggregate demand and, consequently, prices. The transmission mechanisms of monetary policy are well-known, so we do not elaborate on them at this point. The issue of the impact of money on inflation is discussed in more detail in Section 6.

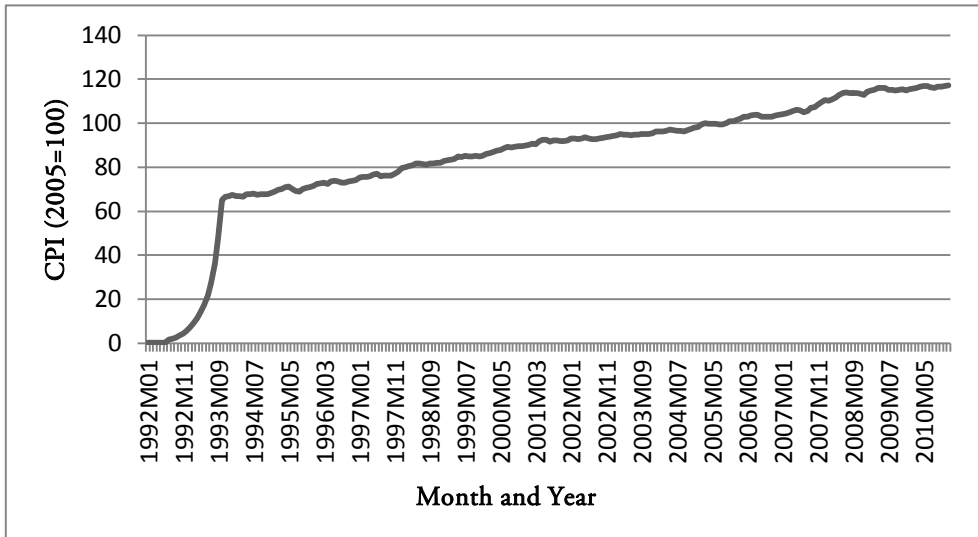
Methodological Approach

Data Issues

Changes in economic policies and economic structures that happened during transition to a market economy raise questions about the appropriate methodology to apply, as well as about the best ways to incorporate these changes in the econometric model. Some of the problems that arose are: the relatively short time span (most transition countries have the data only from 1990 onwards); seasonal adjustment of the data, which is more notable in the monthly data usually used in modelling economies in transition; measurement problems that consist of non-systematic errors; partially observed variables and systematic measurement errors (Erjavec, 2003). In this section we briefly discuss some of the mentioned problematic issues.

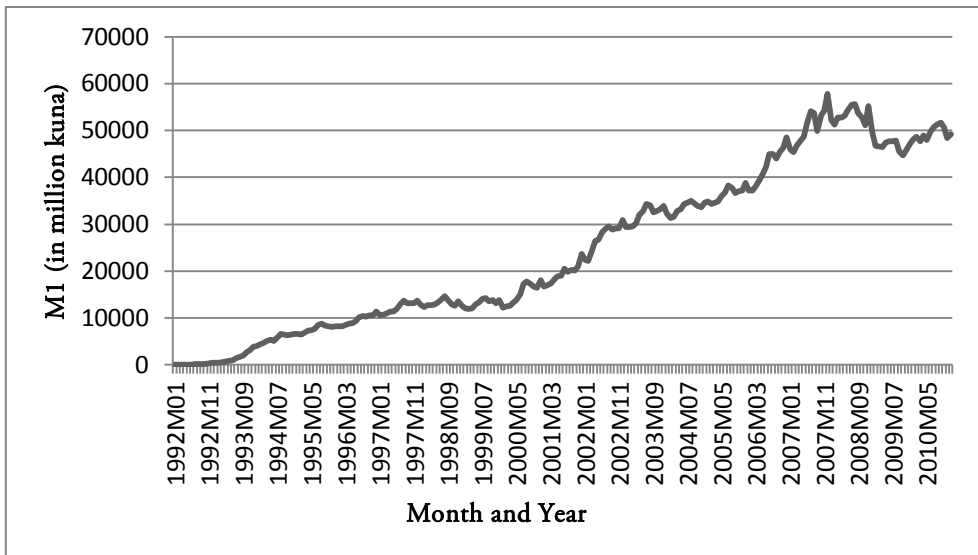
In the period under investigation a structural break occurred, when the 1993 Stabilisation Programme drastically and suddenly changed the value of all the variables in our model, as presented in Figures 4-7.

Figure 4. CPI During the Period 1992:M1-2010:M12



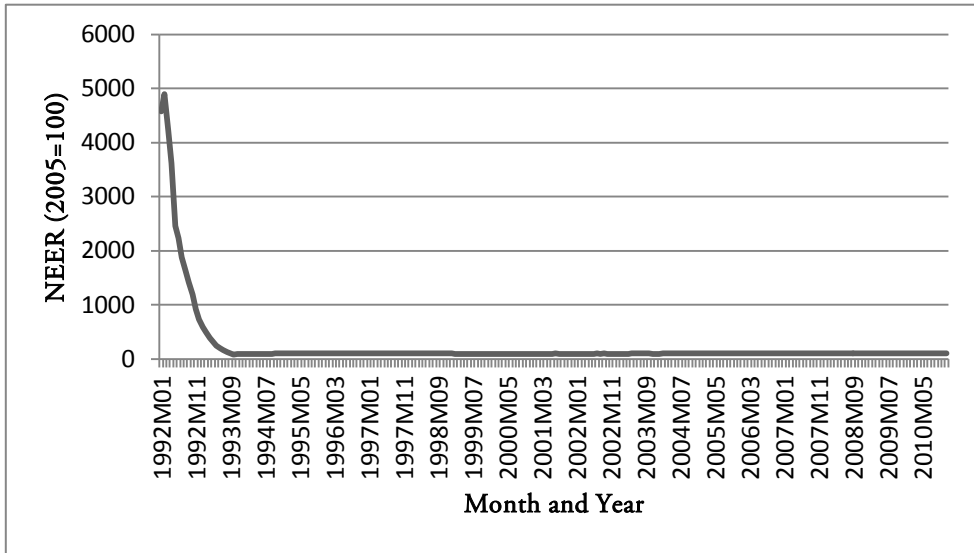
Source: *International Financial Statistics and author's calculations*

Figure 5. M1 during the Period 1992:M1-2010:M12



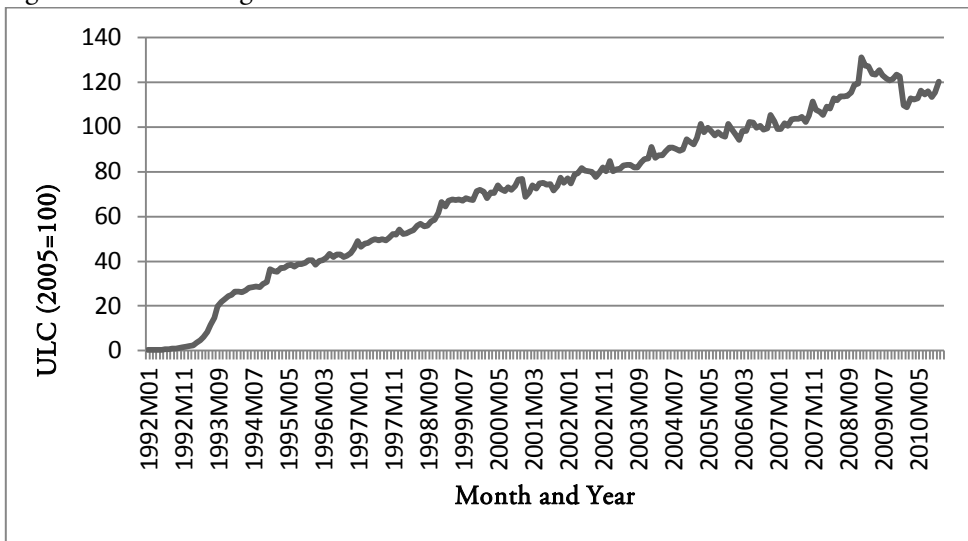
Source: *International Financial Statistics and author's calculations*

Figure 6. NEER during the Period 1992:M1-2010:M12



Source: International Financial Statistics and author's calculations

Figure 7. ULC during the Period 1992:M1-2010:M12



Source: International Financial Statistics and author's calculations

Structural breaks have to be accounted for in both unit root testing and in cointegration analysis. Namely, as observed by Perron (1990), conventional unit root tests may be unable to distinguish between the data generating process where random shocks exert permanent effects on the economic system and the one in which such shocks have no permanent effect but take place in the presence of a one-time permanent shift(s) in the trend function. This renders a need to develop alternative statistical procedures that can distinguish a process with a unit root from a process stationary around a trend function, which contains a one-time break (Perron, 1989).

As for cointegration, Trenkler et al. (2006) note that ignoring structural breaks can lead to seriously incorrect inference in cointegration testing. More precisely the incidence of structural changes has an influence on the conclusion about the cointegrating rank. Using an incorrect cointegrating rank can in turn lead to a wrong economic interpretation of the behaviour of the system analysed and, furthermore, it may have a negative impact on other inference tools (Trenkler, 2002). For these reasons in our empirical work we carefully account for structural breaks in both; unit root and cointegration testing.

Another problem is that of unreliable and unavailable data, especially in the first years of transition. We, however, managed to obtain the data on all the variables from 1992 onward. The data on consumer price index (CPI) is taken from the International Monetary Fund (IMF) International Financial Statistics (IFS) database. It is expressed as an index based in 2005. As for the ULC, since this series is not readily available for Croatia on monthly basis, we first calculate a proxy for labour productivity by dividing industrial production with the number of persons employed in the industry and then compute the ULC as the ratio of nominal wages per period to labour productivity. The data on monthly industrial employment and production is taken from the Croatian Bureau of Statistics. The data on monthly wages is taken from the IFS. It should be noted that the productivity measure is a rather narrow one, since it is calculated only for the industry sector. However, since the data is not available for other sectors, this is a common approach to calculating unit labour costs (see, for example, Tica and Jurcic, 2007). The nominal effective exchange rate (NEER) is taken from the IFS database, and it is expressed as an index with a base in 2005. Most problems were encountered with regards to the money supply variable. For money supply we use the M1 monetary aggregate in our empirical analysis. Although some papers suggest using a broader monetary aggregate as a determinant

of inflation we believe that high liquid money is better at predicting the CPI because the function of money as a medium of exchange is more relevant than its function as a store of value in this context (which is essentially captured by M4). Croatian National Bank publishes monthly data on M1 from June 1994 onwards. The data from January 1992 to April 1994 that we use in our analysis is from an old CNB Bulletin, and it is expressed in Croatian dinars. The parity between kuna and Croatian dinar was 1:1000 at the moment of introduction of the kuna, so we convert this series to kunas. Furthermore, since we pool the data from two different periods (pre- and post-Stabilisation period) the data for May 1994 was missing. This issue was solved through imputation.

All the data in our model is monthly, seasonally adjusted and converted into logarithms. The analysed period is January 1992 – September 2011.

Unit Root Testing

The date of the structural break (T_B) in our data is known - it is the Stabilisation Programme in October 1993 (data plots in Figures 4-7 also shows this very clearly), and this should be taken into account in testing for stationarity. Hence, following Perron (1989, 1990), in testing for the existence of unit roots we run the following model:

$$\Delta y_t = \hat{\mu} + \hat{\theta}DU_t + \hat{\beta}t + \hat{\gamma}DT_t + \hat{d}DTB_t + \hat{\alpha}y_{t-1} + \sum_{i=1}^k \hat{c}_i \Delta y_{t-i} + \hat{e}_t \quad (2)$$

where y_t is a time-series that is being tested; $\hat{\mu}$ is the estimated constant; $\hat{\theta}$ is the estimated coefficient on DU ; DU is a dummy variable equal to one for all periods after the structural break ($>T_B$) and zero otherwise; $\hat{\beta}$ is the estimated coefficient on the time trend, t is the time trend; $\hat{\gamma}$ is the estimated coefficient on DT ; DT is a dummy variable equal to the time trend for all periods after the structural break ($>T_B$) and zero otherwise; \hat{d} is the estimated coefficient on DTB ; DTB is a dummy variable equal to one only in the period right after the structural break (T_B+1) and zero otherwise; $\hat{\alpha}$ is the estimated coefficient on y_{t-1} , while y_{t-1} is the first lag of y_t ; \hat{c}_i is the estimated coefficient on Δy_{t-i} ; Δy_{t-i} stands for various ($i=1, \dots, k$) lagged differences of the dependent variable and \hat{e} is the estimated white-noise error term.

The results of unit root testing are given in Table 2.

Table 2. Perron's Unit Root Tests

VARIABLE	LEVELS		GROWTH RATES ⁱⁱ	
	t-stat	lags ⁱⁱⁱ	t-stat	lags
CPI (no trend)	5,4242***	12	-12,0466***	12
CPI (with trend)	-1,0847	12		
M1 (no trend)	-2,3522	12	-8,5260***	11
M1 (with trend)	-2,3585	12		
NEER (no trend)	-5,2637***	12	-6,9104***	5
NEER (with trend)	-3,2281	12		
ULC (no trend)	-2,1079	12	-7,6652***	2
ULC (with trend)	-2,5455	12		

*Numbers in the table are t-statistics on the coefficient α from (2). The null hypothesis is that $\alpha=0$. Critical values from Perron's (1989) model C; are -4.38; -3.75 and -3.45 for 1 (***), 5 (**) and 10 (*) percent, respectively.*

Table 2 presents the t -statistics on the coefficient α in (2). These statistics are compared to critical values available in Perron (1989). A visual inspection of the data (Figures 4-7) suggested that our variables of interest are non-stationary, and this visual impression is further confirmed by the results in Table 2. Namely, the null of a unit root cannot be rejected for all the tested variables in levels. The only exceptions are the CPI and NEER without the trend. For growth rates, on the other hand, we can strongly reject the null of a unit root. Taken together, the results indicate that the variables in levels are $I(1)$, that is, non-stationary, so our next step is to test the variables for cointegration.

Cointegration with a Structural Break

In order to empirically investigate and apply the theoretical model presented in (1) to Croatian data we use cointegration approach for two main reasons. Firstly as indicated before, VAR approach often used for investigating the sources of inflation is misspecified in the case when cointegrating relationships exist among the variables of interest. Secondly, cointegration embeds the economic notion of a long-run relationship between economic variables and our data enables us to analyse the longest possible period, which has not been analysed before.

Another issue is that a structural break occurred in the period under investigation, so the approach we actually undertook is that of cointegration in the presence of structural breaks. Johansen, Mosconi and Nielsen (2000) generalise the cointegration analysis in a multivariate setting developed by Johansen (1988, 1991), to the case where structural breaks exist at known points in time. As the authors point out, their model generalises Perron's (1989, 1990) model C (that we used for unit root testing). The major issue related to cointegration in the presence of structural breaks is that new asymptotic tables are required. They are not, as before, published or readily available. This is because the critical values depend on whether and how many trend breaks or just simple level shifts are included in the model. Furthermore, the relative break points or, to be more precise, the relative sub-sample lengths have an impact on the critical values.

The Johansen, Mosconi and Nielsen (2000) approach to cointegration in the presence of structural breaks has not been widely used by applied economists, as it is relatively new, and the computation of critical values can be difficult. In addition, it has not, to the best of our knowledge, been applied to the analysis of inflationary dynamics before. We have already stated that the incidence of structural changes has an influence on the conclusions about the cointegrating rank, which can cause wrong economic interpretation. Furthermore, Trenkler (2002) finds that ignoring level shifts leads to size distortions in such a way that the tests' size approaches zero for increasing values of the shift magnitude. For these reasons we believe it is necessary to apply the Johansen, Mosconi and Nielsen (2000) approach in our analysis.

The main logic behind the Johansen, Mosconi and Nielsen (2000) model is that an observed time series is divided into sub-samples according to the positions of structural breaks. A vector autoregression is chosen for each of the sub-samples, so that the parameters of the stochastic components are the same for all sub-samples, while the deterministic trend differs between sub-samples.

The model we use is given below:

$$\Delta Y_t = \nu + \alpha[\beta'Y_{t-1} + \tau(t-1) + \phi DT_{t-1}] + \sum_{i=1}^{k-1} \Gamma_i \Delta Y_{t-i} + \sum_{i=0}^{k-1} \gamma_i DTB_{t-i} + \eta DU_t + \varepsilon_t \quad (3)$$

where Y_t is a $(m \times 1)$ vector of m different (endogenous) time-series; ν is a $(m \times 1)$ vector of constants; α is a $(m \times r)$ matrix of loading coefficients, r being the number

of cointegrating vectors; θ' is a $(r \times m)$ matrix of cointegrating coefficients; Y_{t-1} is a $(m \times 1)$ vector of endogenous time-series lagged once; τ is a $(r \times 1)$ vector of coefficients on the time-trend $(t-1)$, which is a $(1 \times r)$ vector and restricted to the cointegrating vector; ϕ is a $(r \times 1)$ vector of coefficients on DT ; DT is a $(1 \times r)$ vector representing trend shift dummy; Γ_t is a $(m \times m)$ matrix of coefficients on each differenced lag (k being the number of lags) of the endogenous variables; ν_t is a $(m \times 1)$ vector of coefficients on DTB ; DTB is a $(1 \times m)$ vector of impulse dummies, while η is a $(m \times 1)$ vector of coefficients on DU ; DU is a $(1 \times m)$ vector of level shift dummies. Finally, ε_t is $(m \times 1)$ vector of white noise disturbances. DT , DTB and DU are defined as in Perron's (1989, 1990) unit root tests above.

Results

The Johansen, Mosconi and Nielsen (2000) procedure tests for the rank, r , of the matrix $\Pi = \alpha\beta'$, where α is the matrix of adjustment coefficients, while the matrix β includes cointegration vectors. The cointegration tests check the pair of hypothesis (trace variant) $H_0(r_0): rk(\Pi) = r_0$ versus $H_1(r_0): rk(\Pi) > r_0$, r_0 being the tested rank of the matrix Π . The results of the Johansen trace test are given in Table 3.

Table 3. Johansen Trace Test ($H_0: r=r_0$)^{iv}

r_0	p-value	90%	95%	99%
0	0.0000	70.54	74.57	82.52
1	0.0181	47.64	51.05	57.85
2	0.3023	28.61	31.37	36.99
3	0.5715	13.58	15.67	20.10

The results suggest that there exists one cointegrating vector, so we proceed using Johansen reduced rank maximum likelihood (ML) approach for estimating cointegration parameters in our vector error correction model (VECM). This procedure is based on (3), and has a trend (t) and trend shift (DT) restricted to the cointegrating relationship. The obtained cointegrating relation is given below.

$$\ln(CPI) = 0.521 \ln(NEER_t) - 0.147 \ln(M1_t) + 0.520 \ln(ULC_t) - 0.386DT_t + 0.387t + ec_t \tag{4}$$

where ec_t denotes deviations from the estimated cointegration relation. T-statistics (not reported) indicate that all the variables in the cointegrating vector are significant

at conventional levels. The results indicate that unit labour costs and exchange rate exert a positive impact on the CPI, while monetary aggregate M1 exerts a negative impact. The first two results are in line with our prior expectations. Namely, an increase in unit labour costs, which essentially means an increase in wages over and above gains in labour productivity, induces employers to pass the higher costs onto consumers in the form of higher prices, in order to protect the real value of their profits. In our model an increase in ULC by one percent leads to an increase in the price level of 0.52 percent (*ceteris paribus*). Increase in the exchange rate, that is currency depreciation, also influences prices positively, by increasing the domestic prices of imported goods. Our results suggest that a one percent kuna depreciation induces a 0.521 percent increase in prices (*ceteris paribus*). This can be interpreted as a long-run pass-through coefficient. Finally, the result on M1 variable is not in line with theory, as we would anticipate inflationary effect of excess money. Our results, however, suggest that money (M1) growth of one percent induces a fall in the prices of 0.147 percent, *ceteris paribus*. Since this finding seems unusual at first, we next investigate this relationship in more detail.

The relationship between money and prices stems from the quantity theory of money, which implies that an increase in money supply causes proportional change in the price level. The whole theory is based on the identity $MV=PY$, where M represents the stock of money; V is the velocity of money; P stands for the price level, and Y is the real income. The above identity implies that money is inflationary only under the assumption that money velocity is time invariant or constant. If, however, money velocity is time variant, then an increase in money supply may coincide with equivalent or a larger drop in velocity and, as a result, coexist with no or even negative change in nominal income (PY). This is sometimes referred to as 'velocity crowding-out of quantitative easing' (Pattanaik and Subhadhra, 2011).

A declining velocity means that the interval between economic transactions has increased, which implies the money demand is increasing (both consumers and businesses wish to hold more cash). For as long as velocity continues to decline, acceleration in the underlying rate of inflation is highly unlikely, regardless of the rate of expansion of the money stock.

To check whether this might indeed be the case with our data, we calculate money velocity from the above identity, using M1 as M , CPI as P and industrial production index (taken from the IFS database) as a proxy for real output (Y) (due to

unavailability of monthly GDP data).^v The velocity series derived in this manner is presented in Figure 8.

From Figure 8 we can clearly see a structural break in 1993, followed by a downward trend in money velocity in the period under investigation. This property of money velocity in Croatia has already been observed by Cziraky and Gillman (2006), who find this variable to be non-stationary (and descending) in the period 1994-2002.

Figure 8. Velocity of Money in Croatia in 1992:1-2011:9



Source: *International Financial Statistics and author's calculations*

In general, high volatility of money velocity arises as a result of high currency and asset substitution which happens as a response to economic and political instability and hyperinflation. This is a common feature of developing and transition economies and, as explained in Section 2, of Croatia also. An unstable money velocity implies that money demand is also unstable, resulting in monetary authorities not being able to rely on a dependable transmission mechanism between money supply and inflation.

As indicated in Section 2, due to exchange rate targeting, money supply in Croatia is endogenous, or, in other words, determined by the developments in the foreign exchange market. This means that an increase in the exchange rate (currency depreciation), triggers a reaction from the central bank, which sells foreign exchange and decreases money supply thereby dampening the fall in the currency value. Increase in the exchange rate leads to an increase in inflation, and since money adjusts so as to keep the exchange rate (relatively) fixed; this results in there being a negative relationship between money and prices.

In conclusion, the opposite signs on the exchange rate and money supply variables seem to reflect Croatian monetary policy quite well. Namely, given Croatia's 'fear of floating' syndrome, high level of euroisation and monetary policy focused on maintaining the exchange rate stability, the importance of the exchange rate channel in monetary transmission should come as no surprise. Interestingly, Vizek and Broz (2009) justify their finding of a negative effect of depreciation on inflation by excessive monetary reaction to depreciation pressures. Contrary, our results suggest that the central bank reaction is moderate, and that it is the impact of the exchange rate, rather than that of the money supply, that is crucial for influencing inflation. This is in line with the conclusions of Coricelli, Jacbec and Masten (2004) that an accommodative exchange rate policy is one of the main sources of inflationary pressures in accession countries.

To complete our analysis, we comment on the four associated error-correction models (ECMs). Table 4 reports the adjustment coefficients which measure the rate at which one of the endogenous variables adjusts each month to correct a temporary disequilibrium in the cointegrating vector.

Table 4. Adjustment Coefficients and their Associated *t*-statistics

Dependent variable in the ECM			
<i>ln(CPI)</i>	<i>ln(NEER)</i>	<i>ln(M1)</i>	<i>ln(ULC)</i>
-0.069***	0.137***	-0.001	0.394***
(-3.837)	(6.357)	(-0.010)	(5.853)

t-ratios in parenthesis; ***, ** and * stand for the 1, 5 and 10 percent levels of significance, respectively

All the coefficients in Table 4, apart from the one in the money equation, are statistically significant, implying that the cointegrating vector enters all equations, but the third one. The loading coefficient for the first equation (with *ln(CPI)* as the

dependent variable) is -0.069, suggesting that, if the price level is temporarily above (below) its long-run equilibrium level, then inflation falls (rises) by, approximately, 7 percent each month until equilibrium is restored. This implies a period of 33 months for a 90 percent of adjustment to take place. The adjustment coefficient in the ECM with percentage changes in the exchange rate as the dependent variable is 0.137, meaning that if the past price level has been too high (low) in relation to the long-run equilibrium, then the equilibrium will be achieved through currency adjustment of 13.7 percent monthly. It would, therefore, take a year and a half for the 93 percent of correction to take place in this manner alone. Finally, the adjustment coefficient in the ECM with ULC growth as the dependent variable indicates that if the price level is above the equilibrium level, ULC will adjust almost 40 percent each month in order to restore the equilibrium, suggesting that 90 percent of adjustment will be achieved after only 4 to 5 months. It should be emphasised that the above adjustments assume that there were no changes in other variables at the same time.

The results, furthermore, imply that money supply is weakly exogenous. Namely, a variable is considered to be weakly exogenous if the cointegrating relation does not enter the equation for that variable. This is in line with the aforementioned endogeneity of money supply in Croatia.

In order to preserve space, especially given that we use 10 lags in our model, the four error correction models are not reported in full. Let us just note that in each error correction equation a lot of short-run determinants are found to be statistically insignificant. Those that are significant refer mainly to the influence of inflation, exchange rate depreciation and ULC growth on inflation. This suggests that it is not only the exchange rate and ULC that play an important role in influencing current inflation, but that there exists considerable inflation inertia also. Indeed, the coefficients are found to be significant for lags 1, 5, 6, 8 and 10. Furthermore, past values of the exchange rate, ULC and inflation also exert a significant impact on the current exchange rate. Short-run coefficients are found to be mostly insignificant in their influence on money and ULC.

Robustness Checks

Robustness checks have been undertaken in order to test the validity of our results and, consequently, conclusions.

Firstly, the same model has been tested as in (4) only this time using M4 monetary aggregate for money variable, since some papers use this broader definition of the money supply (see, for example, Botric and Cota, 2006). The results do not change upon this, in terms of signs and significances of the variables in the model. We also test whether including wages instead of the ULC changes the main implications of the results, but this does not influence the findings notably. We also test the same model with twelve lags (larger number of lags as suggested by some information criteria), which, besides improving the diagnostics somewhat, has no effect on our conclusions.

In addition, given that some papers find that it is important to include oil prices as additional explanatory variable, because they represent an important cost-push shock (see for example, Mohanty and Klau, 2001; Golinelli and Orsi, 2001; Arratibel et al., 2002 and Malešević Perović, 2009), we, accordingly, expand the model so that it includes the influence of oil prices on inflation. Following Malešević Perović (2009) this issue has been approached in three ways. We firstly test whether including just world oil prices (world monthly crude oil (petroleum) prices from the IFS database have been used) as additional (exogenous) variable affects inflation and our conclusions regarding the cointegrating vector. Secondly, we use a shift dummy variable for the period after 2001, since this is the period when prices of oil in Croatia began changing in accordance with the world prices. Thirdly, we also multiply this dummy variable with the oil price variable thus including only the oil prices after 2001 in the model. In addition, given that value added tax (VAT) was introduced in Croatia in 1998 we also include additional dummy for this VAT change since it could potentially act as an additional cost-push factor. None of the above changes significantly influences our findings in terms of the signs and sizes of the coefficients in the cointegrating vector.

Given that the inclusion of the early, unstable, period in our analysis might be perturbing our results, we furthermore test only the period after June 1994, which excludes the structural break and the data of questionable quality. The results (not reported) confirm the existence of one cointegrating vector, in which money is again found to influence inflation negatively and all the other signs and significances remain the same.

Furthermore, as it was emphasised in Section 2, because of exchange rate targeting money supply in Croatia is endogenous. It might be more informative, then, to include money supply in the anchor country as a determinant of Croatia's inflation.

We test for this by including monthly broad money for Euro area, since Croatian currency was firstly tied to the German mark, and later on to the euro. The data is taken from OECD Statistics, and is compiled from the national contributions supplied by the participating countries' national central banks. Data prior to January 1999 have been converted from national currencies using the irrevocable exchange rates fixed on 31 December 1998. Upon inclusion of this monetary aggregate our results (not reported) still suggest that there is one cointegrating vector among the variables in the model, and within this vector all the variables have positive signs, that is, the signs implied by the theory. Money supply is, however, statistically insignificant in this setting.

Conclusion

Our analysis differs from other investigations of the inflationary dynamics in Croatia in several aspects. Firstly, we use a newer and longer sample that includes the last twenty years. Furthermore, we use a novel approach – cointegration with structural breaks, which enables us to include the early, pre-stabilisation, period into the analysis and account for structural breaks properly. In addition, instead of the usually-used variable in this sort of analysis – wages, we construct and use unit labour costs, which reflect the cost-push aspect of inflation better.

Our results indicate that there is a long-run relationship between inflation, exchange rate, unit labour costs and money growth. Expectedly, currency depreciation is found to add to inflation, and this pass-through coefficient is found to be quite large, contrary to the findings of Billmeier and Bonato (2004) and Kraft (2003). Unit labour costs are also identified as an important cost-push factor. Moreover, majority of adjustment towards the long-run equilibrium seems to be happening precisely through this channel. This finding contradicts Botric and Cota (2006) who conclude that, although important, wage growth has lost its strength in explaining the rates of inflation. Finally, papers dealing with Croatia typically find that money growth is not significant in its influence on inflation or that this influence is positive (see Section 2). We, on the other hand, find this influence to be statistically significant, extremely robust and negative. This negative impact of money supply is interpreted as a logical result, given the circumstances in which monetary policy in Croatia operates. Namely, exchange rate targeting, which has roots in Croatia's hyperinflationary history and the conduct of the 1993 Stabilisation Programme, results in money being endogenous in Croatia. We argue that this accommodative exchange rate policy leads to a situation where an increase in the exchange rate leads

to an increase in inflation, and since money adjusts downward so as to keep the exchange rate (relatively) fixed, this results in there being a negative relationship between money and prices. Taken together, these results point towards the importance of the 'exchange rate view' at the expense of the 'money view' of the monetary transmission channel.

In addition, we argue that the transmission mechanism between money supply and inflation may further be agitated due to the shocks to money velocity, which can add significant noise to monetary analysis. Namely, money injected into the system becomes inflationary only when spent or rolled over frequently, whereas it was shown that money velocity was constantly declining in Croatia in the period under investigation. In this case growing money supply need not mean risks to inflation.

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ⁱ Croatian dinar (HRD) was replaced by Croatian kuna (HRK) in 1994, while German mark officially ceased to be legal tender in 2001 and was replaced by the euro. For these reasons in Figure 3 we present the kuna/euro exchange rate.

ⁱⁱ We use Perron's procedure for growth rates and not first differences, as it is unclear how and/or whether this procedure can be used with differences. As for the growth rates we just assumed that the variable was not, for example, CPI but rather inflation (that is, CPI growth). In this way we used the same procedure as we did when testing the levels of the variables.

ⁱⁱⁱ We use Perron's procedure for growth rates and not first differences, as it is unclear how and/or whether this procedure can be used with differences. As for the growth rates we just assumed that the variable was not, for example, CPI but rather inflation (that is, CPI growth). In this way we used the same procedure as we did when testing the levels of the variables.

^{iv} 10 lags were used as suggested by the Akaike information criterion.

^v $v = \ln(V)$; $p = \ln(CPI)$; $y = \ln(Y)$ and $m = \ln(M1)$

Effects of the Demographic Changes on Private Consumption: An Almost Ideal Demand System Analysis for Austria

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Abstract: *The following paper analyzes potential effects of the demographic changes on private consumption. An extended Almost Ideal Demand System is built to simulate changes in the consumption of goods and services due to the ageing of the population in Austria - on national as well as regional level. Therefore, age-specific income elasticity and price elasticity are estimated. The estimated model is used to project the consumption structure in 2030 for four scenarios: Firstly, only the ageing process of the population is considered. Secondly, the ageing as well as changes in household structure are taken into account. Scenario three and four furthermore consider potential changes in income distribution due to the ageing as well as price changes and its effects on the consumption structure of the ageing society. The results reveal direct positive effects of the ageing of the population on the consumption shares of food and non-alcoholic beverages, housing, water and fuel, health, as well as miscellaneous goods and services, while the consumption category transport loses the highest proportion in total consumption. But these results do not hold anymore as soon as potential changes in income distribution - as an indirect effect of the ageing - are considered.*

Keywords: *Ageing; Private Consumption; Demand System; AIDS; Consumption Structure*

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Introduction

As with the case of many industrialized countries, Austria faces a decreasing birth rate and an increasing life expectancy with the consequence of an ageing population. From 2013 to 2030 the share of older people (65 and more years) is expected to rise by 5.8 percentage points: from 18.2% to 24.0%. Simultaneously, the shares of young people (0-19 years) and the potential working population (20-64 years) will decline by 0.8 and 4.9 percentage points, respectively (Statistik Austria, 2013a). These demographic trends will not only be a test for the federal pension system and affect the labour market, but will also influence private consumption. In Austria, private consumption accounts for more than 50 % of GDP (53.6% in 2012; Statistik Austria, 2013b) and is therefore a crucial economic factor, which influences the production side and the demand of labour in an economy, additionally.

The consumption behaviour of a household varies greatly by age due to differing preferences and needs with increasing age of the household members. The following paper aims to estimate potential effects of the demographic changes on the structure of private consumption in Austria. An extended Almost Ideal Demand System (AIDS) is estimated to receive age-specific demand equations for Austria as a whole as well as on regional level. The demand system is subsequently used to simulate potential effects of demographic changes (ageing, changing household size), as well as variations in income and prices on the structure of private consumption in Austria up to the year 2030.

The paper is structured as follows: Part two gives an overview of the literature. In part three the estimated extended AIDS model and its specifications are defined. In part four data used for the analysis is described. The results of the model estimation, that is income elasticity for seven age groups and price elasticity, are presented in fifth part. Sixth part focuses on the scenarios and the potential effects of population ageing on private consumption in Austria. While scenario 1 shows the direct effects of the ageing of the population, in scenario 2 the changing household size as demographic trend is included, additionally. Scenarios 3 and 4 focus on potential changes in income, as well as prices, and its effects on private consumption. Finally, in chapter 7 a conclusion is given.

Literature Review

Households have a limited income available and choose which goods and services to consume. Microeconomic consumer theory focuses on a household's decision on what and how much to consume. According to theory the choice of goods and services is determined by the preferences of the household, with the aim to maximize utility under the given income of the household and prices of the goods and services (Woekener, 2006, p. 65ff). The preferences of a household are dependent on household specific characteristics as the size of the household, its composition or age structure, as well as regional or legal parameters and changes in time. Regarding demographic indicators, the consumption behaviour of a household varies greatly by age due to differing preferences and needs with increasing age of the household's representative. As an example, in general, young people will have higher expenditures in the field of education, while older people demand more goods and services in the health sector. Contrarily, work related expenditures (such as for transportation or clothing) are decreasing in retirement (Hurst, 2008). Furthermore, the consumption structure differs by age cohort due to the comparable historical, economical or societal framework people went through (Evans, Jamal and Foxall, 2009, p. 158ff).

The differences in consumption by age are empirically shown by various studies. Foot and Gomez (2006) prove with data for Great Britain that the consumption structure of private households changes greatly by age. Especially the expenditure shares for food and non-alcoholic drinks, alcoholic beverages, tobacco, etc., and furnishing, household equipment, etc. increase by age, while expenditures for clothing and footwear, communication and transport are higher in younger ages. An investigation for Germany documents age-specific consumption patterns of households, as well as a significant influence of the age factor on all consumption categories (Buslei, Schulz and Steiner, 2007). Especially for the categories housing, water and fuel as well as health expenditures increase in higher ages, while expenses for transport decrease (Deutsche Bank Research, 2007, p. 13). Based on an estimation of age-specific demand elasticities Yoon and Hewings (2006) show for Chicago and Wakabayashi and Hewings (2007) for Japan how households react differently on price and income changes dependent on age. For example, an increase in income leads to a disproportionate increase in the consumption of alcoholic beverages and tobacco, etc. in younger years, while the consumption category is classified as inferior good in higher ages.

A broader analysis of OECD countries indicates that the consumption proportions for housing, energy and health are increasing by age, whereas expenditures for transportation, entertainment and education are decreasing. Considering projection results including demographic shifts up to the year 2050, the consumption category health increases the most in budget shares, followed by energy. On the opposite side education faces the biggest losses (Martins et al., 2005). Similar results are achieved by Foot and Gomez (2006) for Great Britain – the ageing shows the highest positive effect on expenses in the field of health and a significant negative consequence for educational expenditures. For Belgium an upward trend in aggregate demand is projected for leisure and health expenditures, too, while equipment, transport and clothing loose in significance caused by the demographic effect (Lefebvre, 2006). Results for the ageing in Germany reveal increased consumption in housing and health and decreased expenditures for transport (Deutsche Bank Research, 2007 and Buslei, Schulz and Steiner 2007). Deutsche Bank Research (2007) furthermore emphasizes the influence of price and income changes on the consumption structure, due to age-specific demand elasticities.

For Austria a recent analysis of data of the consumer budget survey by Url and Wüger (2005) shows differences in the consumption behaviour between retired (60+ years) and working households. It is revealed that old-age households consume more in the fields of health, food and non-alcoholic beverages, housing, water, electricity, gas and other fuels as well as miscellaneous goods and services in Austria, but spent less for the categories education, transport, alcoholic beverages, tobacco and narcotics as well as restaurants and hotels. A projection of the consumption structure in 2050 based on the same data basis confirms exactly increases and decreases in the mentioned consumption categories, respectively (Aigner-Walder and Döring, 2011). But a detailed analysis for Austria, based on an estimated demand system – with the possibility to integrate influences of income and prices within the consumption decision process, as stipulated by microeconomic theory – to simulate potential effects of the ageing of the population on the structure of private consumption in a broader view, is missing so far. These topics are in focus within the following chapters, starting with an outlay of the methodology used for the estimation of an age-dependent consumption model.

Methodology

The model which is used for the estimation of age-specific demand equations and the simulation of effects of the demographic change on private consumption is based

on the Almost Ideal Demand System (AIDS) proposed by Deaton and Muellbauer (1980). The AIDS specifies the consumption decision as a function of income (total expenditures) and prices of goods (see 1). w_i is the budget share in good i , p_j is the price of good j , x is the total expenditure of the household for all goods and services and P is a price index, defined by (2). The AIDS gives a random first-order approximation to any demand system, satisfies the axioms of choice and perfect aggregation over consumers.

$$w_i = \alpha_i + \sum_j \gamma_{ij} \log p_j + \beta_i \log(x/P) \quad (1)$$

$$\log P = \alpha_0 + \sum_k \alpha_k \log p_k + \frac{1}{2} \sum_j \sum_k \gamma_{kj} \log p_k \log p_j \quad (2)$$

To be in consistence with consumption theory, the restrictions illustrated in (3) to (5) are to be satisfied. The conditions for adding-up (3), homogeneity (4) and symmetry (5) were introduced as parameter restrictions in the estimation process.

$$\sum_{i=1}^n \alpha_i = 1 \quad \sum_{i=1}^n \gamma_{ij} = 0 \quad \sum_{i=1}^n \beta_i = 0 \quad (3)$$

$$\sum_j \gamma_{ij} = 0 \quad (4)$$

$$\gamma_{ij} = \gamma_{ji} \quad (5)$$

Due to the definition of the price index P in (2) the AIDS model is a nonlinear system. For a transformation into a linear system Deaton and Muellbauer suggest using the Stone price index P^* , defined as illustrated in (6). The following linear demand system, the so called Linear Approximate Almost Ideal Demand System (LA/AIDS) takes the form of (7). This procedure is often used in applications; although it has limitations (Buse, 1994).

$$\log P^* = \sum w_k \log p_k \quad (6)$$

$$w_i = \alpha_i^* + \sum_j \gamma_{ij} \log p_j + \beta_i \log(x/P^*) \quad (7)$$

In order to receive age-specific demand elasticity, the model (7) is extended by additional variables. Besides a dummy variable for the age of the household dum_a and a slope dummy variable κ for the influence of the age of the household on the income parameter, dummy variables for the household size dum_s and the region dum_r are included. For Austria data about consumption patterns together with

socio-demographic variables and the income of households is available within the consumer expenditure survey (CES). Information on prices is not presented and because of the fact that the CES is a cross-sectional survey, identical prices are assumed, the Stone price index being 1. This gives (8).

$$w_i^C = \alpha_i^{*C} + \beta_i^C \log x^C + \sum_a \kappa_{ia} (\text{dum}_a \log x^C) + \sum_a \mu_{ia} \text{dum}_a + \sum_s \sigma_{is} \text{dum}_s + \sum_r \tau_{ir} \text{dum}_r \quad (8)$$

Information on prices of goods is available on national level, combined with aggregated private consumption within the National Accounts. The construction of a panel data model is not possible due to the inconsistency of the consumer expenditure survey and conceptual differences. In order to receive both – income and price elasticity – a combined econometric model with the time series data and the cross-sectional data is estimated (see for a similar methodology Kratena, Meyer and Wüger 2009). After the estimation of the cross-sectional model (as seen in 8), a time series model is estimated (see 9) to receive information on the influence of prices on the consumption shares of a household. Both models are subsequently linked by the income parameter. By the use of (10), the dimensionless price elasticity of the time-series model is used to calculate the parameters γ_{ij}^* for the price variables of the combined model. The parameters are consistent with the budget shares in the combined model. Furthermore, the influence of the socio-demographic variables age, household size and region is scaled in relation to the share of the corresponding groups in the total number of households (d). Equation (11) illustrates the form of the final demand model, containing parameters for prices, income, age, household size and region.

$$w_i^T = \alpha_i^{*T} + \sum_j \gamma_{ij}^T \log p_j^T + \beta_i^T \log(x^T/P^{*T}) \quad (9)$$

$$\gamma_{ij}^* = (\varepsilon_{ij}^T + \delta_{ij}) w_i^C + \beta_i^C w_j^C \quad (\delta_{ij} = 0 \text{ for } i \neq j; \delta_{ij} = 1 \text{ for } i = j) \quad (10)$$

$$w_i = \alpha_i^* + \sum_j \gamma_{ij}^* \log p_j + \beta_i \log x + \sum_a \kappa_{ia} d_a \log x + \sum_a \mu_{ia} d_a + \sum_s \sigma_{is} d_s + \sum_r \tau_{ir} d_r \quad (11)$$

The speciality of the final model is its specification for different age groups - concerning the income elasticity as well as a dummy variable on age. As a consequence, the model can be used to simulate the effects of the ageing of the

population on the structure of private consumption in Austria. Within the following chapter the used data for the simulation is described, the results follow subsequently.

Data

For the estimation of the cross-sectional model the data of the consumer expenditure survey 2004/05 is used. In Austria consumer expenditure surveys have been carried out in a five-year-interval since 1999 and are based on European standards. Prior to 1999 different time intervals, survey methods and classifications of goods and services have been used, making time series analysis hardly possible. The net-sample size of the CES 2004/05 was 8,400 households, proportionally distributed to the nine Austrian regions. The data set contains information on expenditures for goods and services of the household, its income, total expenditures and socio-demographic variables as the number of household members, the age or gender of the household representative. The consumption goods and services are aggregated into the following 12 categories, consistent with the first level of the international compulsory 'Classification of Individual Consumption According to Purpose' (COICOP): 01 Food and non-alcoholic beverages, 02 Alcoholic beverages, tobacco, etc., 03 Clothing and footwear, 04 Housing, water and fuel, 05 Furnishing, household equipment, etc., 06 Health, 07 Transport, 08 Communication, 09 Recreation and culture, 10 Education, 11 Restaurants and hotels, 12 Miscellaneous goods and services. Durable goods are not included (Statistik Austria, 2006).

Within the following analysis differences in consumption behaviour of seven age groups according to the age of the reference person of the household are considered: less than 30 years, 30-39 years, 40-49 years, 50-59 years, 60-69 years, 70-79 years and over 79 years. Furthermore, six categories of households according to its number of members are differentiated: 1 person, 2 persons, 3 persons, 4 persons, 5 persons, 6 and more persons. The analysis is done on national as well as regional level, the latter consisting of three regions. The regions are formed by consideration of the population trends of the nine Austrian federal states: Region 1 consists of the three federal states Burgenland, Carinthia and Styria, facing a comparable older population. Upper Austria, Lower Austria and Vienna, the richly populated states form region 2. Region 3 encompasses the three states with a comparable young population Salzburg, Tyrol and Vorarlberg. For the time-series model with information on prices, data on private consumption in Austria categorized according to COICOP and the corresponding price indices are taken from the National Accounts for the years 1990-2009 (Statistik Austria, 2010). The aggregated time-

series data does not allow for a differentiation of households by age, household size or region.

For the simulation of the development of the consumption structure up to 2030 the household prognosis of Statistik Austria was used as data basis for the demographic changes. Table 1 shows the share in households by age and size in 2010 and 2030, indicating the ageing of the population and the reduction of household size in Austria. The share of all household types with a reference person aged 60 or above increases sharply, while all other age categories show a decreasing trend. Furthermore, Table 1 illustrates that the ageing of the population is already advanced in region 1 (B-K-St), while the ageing process from 2010 to 2030 will be the fastest in region 3 (S-T-V), due to a relatively young population in 2010. In 2030, region 2 (NÖ-OÖ-W) will have the lowest share in households aged 60 and above. At the same time, the share in single-households increases across all regions. On national level it rises from 36.0% in 2010 to 39.5% in 2030. Simultaneously, all household types with at least three household members are decreasing.

Table 1: Share in Households by Age and Size, 2010 and 2030

	Austria		Region 1 (B-K-St)		Region 2 (NÖ-OÖ-W)		Region 3 (S-T-V)	
	2010	2030	2010	2030	2010	2030	2010	2030
Age of reference person								
<30	9.7%	8.1%	8.1%	6.2%	10.5%	9.1%	9.3%	7.2%
30-39	16.2%	14.8%	15.0%	13.0%	16.6%	15.6%	16.7%	14.6%
40-49	22.3%	16.7%	22.1%	16.1%	22.1%	16.9%	23.1%	16.8%
50-59	18.3%	17.0%	19.4%	17.3%	17.8%	16.8%	18.2%	17.2%
60-69	15.2%	19.6%	15.5%	21.1%	15.1%	18.9%	15.4%	19.8%
70-79	11.2%	14.3%	12.1%	16.1%	10.9%	13.6%	11.1%	14.5%
>79	7.0%	9.5%	7.7%	10.1%	6.9%	9.1%	6.3%	9.9%
Number of household members								
1	36.0%	39.5%	32.6%	38.1%	38.5%	40.3%	32.6%	38.8%
2	28.5%	29.8%	29.1%	30.2%	28.2%	30.0%	28.8%	29.0%
3	16.0%	14.5%	17.4%	15.5%	15.1%	14.0%	16.9%	14.7%
4	12.9%	10.8%	13.6%	10.7%	12.1%	10.3%	14.5%	12.1%
5	4.5%	3.6%	4.7%	3.5%	4.2%	3.6%	5.1%	3.8%
6+	2.1%	1.8%	2.6%	2.1%	2.0%	1.8%	2.1%	1.6%

Source: Statistik Austria (2012, 2014a and 2014b), own calculations

Estimation Results

In a first step, the demand system of the cross-sectional model was estimated equation by equation with OLS, using the data of the consumer expenditure survey 2004/05. Table A1 in the appendix shows the parameter estimates for the extended LA/AIDS on national level. 114 out of 228 variables are significant. Income has a significant influence on all budget categories, except communication and restaurants and hotels. This is also visible for the measured age-specific influence of income on consumption – it is significant for all goods and services with the exception of clothing and footwear, and communication. The parameter estimates for the variable age are significant in 28 out of 78 cases, while the number of household members influences the budget share in 39 out of 66 cases significantly. The R^2 is rather low, which can be laid back to the fact that prices are not included in the cross-sectional model. Only the consumption goods food and non-alcoholic beverages, housing, water and fuel as well as transport show with 35.9%, 27.2% and 20.2%, respectively, a higher explained variation by the model, indicating a lower influence of the price level on its consumption. The estimated parameter values are subsequently used to calculate age-specific expenditure elasticity by use of (12).

$$\eta_{ia} = 1 + \frac{\beta_i^c + \kappa_{ia}}{w_i^c} \quad (12)$$

Table 2 shows the corresponding age-specific expenditure elasticity. The consumption good food and non-alcoholic beverages shows an income elasticity below 1.0 for all age groups and is therefore considered as a necessary good by households of all age categories. An increase in demand by a smaller proportion than the rise in income can also be seen for the consumption good housing, water and fuel. These results represent the high relevance in consumption of food, drinks and housing for a living, with lower dependence on income. With an income elasticity above 1.0, households of all age groups consider the consumption goods clothing and footwear, furnishing, household equipment, etc., health, transport, recreation and culture, restaurants and hotels, as well as miscellaneous goods and services as luxury goods, meaning that a rise in income leads to an increase in demand of the mentioned consumption goods by a higher proportion. The remaining consumption groups alcoholic beverages, tobacco, etc., communication and education show a higher variance in elasticity. While alcoholic beverages, tobacco, etc. are a necessary good for all age cohorts under the age of 70 years, they are classified as a luxury good in the age groups above 79 years. Contrarily, education is considered as a necessary

good by the age groups <30 years and >69 years and a luxury good for the age groups in between. Communication can be classified as necessity for the age groups <30, 50-59, and >79 years, being a luxury good otherwise.

Table 2: Age-Specific Income Elasticity

	Age category						
	<30	30-39	40-49	50-59	60-69	70-79	>79
Food and non-alcoholic beverages	0.533	0.469	0.419	0.440	0.377	0.346	0.405
Alcoholic beverages, tobacco, etc.	0.401	0.361	0.454	0.324	0.630	1.045	1.059
Clothing and footwear	1.430	1.342	1.384	1.468	1.235	1.388	1.479
Housing, water and fuel	0.499	0.566	0.581	0.570	0.525	0.532	0.516
Furnishing, household equipment, etc.	1.733	1.566	1.483	1.428	1.632	1.271	1.151
Health	1.185	1.413	1.332	1.410	1.229	1.412	2.101
Transport	1.959	1.905	1.869	1.742	1.812	1.590	1.585
Communication	0.984	1.067	1.072	0.983	1.006	1.203	0.796
Recreation and culture	1.239	1.228	1.301	1.365	1.408	1.340	1.278
Education	0.044	1.039	1.206	1.331	1.018	0.909	0.943
Restaurants and hotels	1.055	1.087	1.132	1.305	1.290	1.639	1.197
Miscellaneous goods and services	1.102	1.075	1.051	1.061	1.127	1.214	1.410

Source: Own calculations

The calculated age-specific income elasticity shows the important role of age for income-dependent consumption decisions: The income elasticity varies greatly by age group. Especially high values of the income elasticity raise the expectation of significant changes in consumption in case of income redistribution, as to be expected by demographic changes. A moderate influence is however seen of the geographic location of the household on its consumption. Table A2 in the appendix shows the results with regional differentiation. Only 10 out of 24 estimates are significant. However, for transport, recreation and culture, as well as miscellaneous goods and services the influence of the regional component on the consumption decision is clearly significant.

In a second step, the price elasticity was calculated. Therefore, the 12 demand equations of the time-series model were estimated. Due to the globally imposed restrictions for the demand system (see 3 to 5), the system estimation method SUR

(Zellner, 1962) was used, allowing a simultaneous estimation of all coefficients of the demand system. Because of the linear dependence of the error terms, as all consumption shares sum up to 1, an equation was omitted and its coefficients calculated by application of the adding-up restriction. Table A3 in the appendix shows the estimated coefficients, 101 out of 154 being significant. R^2 is as expected significantly higher in comparison to the cross-sectional model, in the majority of cases more than 90% of the variation are explained by the model. The parameter estimates were consequently used to calculate the price elasticity by use of (13).

$$\varepsilon_{ij}^T = \frac{\gamma_{ij}^T - \beta_i^T w_j^T}{w_i^T} - \delta_{ij} \quad (\delta_{ij} = 0 \text{ for } i \neq j; \delta_{ij} = 1 \text{ for } i = j) \quad (13)$$

Table 3 shows the corresponding direct and cross price elasticity. The majority of the goods show direct price elasticity between -1 and 0, meaning that those goods and services are inelastic, leading to a lower decrease in consumption than the rise in prices. The lowest effect can be seen for food and non-alcoholic beverages, which can again be explained by the necessity of its consumption. However, households consider the consumption goods clothing and footwear, furnishing, household equipment, etc., education, as well as restaurants and hotels as elastic; an increase in the price of these goods leads to a decrease of demand by a higher proportion. On the contrary, alcoholic beverages, tobacco, etc., as well as communication are considered as Giffen-goods, meaning that an increase in demand is caused by an increase in prices of the mentioned goods.

Table 3: Price Elasticity

	Food and non-alcoholic beverages	Alcoholic beverages, tobacco, etc.	Clothing and footwear	Housing, water and fuel	Furnishing, household equipment, etc.	Health	Transport	Communication	Recreation and culture	Education	Restaurants and hotels	Miscellaneous goods and services
ε_{i1}^T	-0.177	0.513	0.649	-0.530	-0.412	-0.499	0.048	-1.694	-0.224	-0.314	0.506	-0.025
ε_{i2}^T	0.216	1.024	0.267	0.114	0.163	-0.469	-0.272	0.624	-0.116	0.738	-0.643	-0.311
ε_{i3}^T	0.395	0.414	-1.366	-0.142	0.787	-0.120	-0.019	-0.752	0.229	-1.470	-0.149	-0.362
ε_{i4}^T	-0.892	0.346	-0.315	-0.532	-0.218	0.937	-0.304	-2.679	-0.182	-1.470	-0.037	1.384
ε_{i5}^T	-0.260	0.224	0.820	-0.087	-1.606	-0.342	0.152	-0.633	-0.123	-1.325	0.351	0.144
ε_{i6}^T	-0.109	-0.462	-0.013	0.183	-0.121	-0.847	-0.219	0.025	0.222	0.978	-0.129	0.059
ε_{i7}^T	0.160	-1.107	0.103	-0.109	0.363	-0.881	-0.614	-0.854	-0.199	-0.398	-0.076	0.409
ε_{i8}^T	-0.173	0.554	-0.064	-0.145	-0.029	0.169	-0.001	0.376	0.043	0.339	-0.224	0.159
ε_{i9}^T	-0.109	-0.468	0.517	-0.005	-0.083	0.794	-0.159	-0.536	-0.861	-0.348	0.290	-0.403
ε_{i10}^T	-0.013	0.152	-0.142	-0.048	-0.127	0.222	-0.022	0.060	-0.022	-1.191	0.185	0.021
ε_{i11}^T	0.547	-2.263	-0.169	0.001	0.580	-0.529	-0.123	-1.905	0.207	2.776	-1.074	0.263
ε_{i12}^T	-0.129	-1.202	-0.601	0.596	0.089	-0.027	0.137	-0.178	-0.569	0.079	0.094	-0.828

Source: Own calculations

As the cross price elasticity shows, the majority of pairs of consumption goods are complementary goods, meaning that an increase in the price of the first good leads to a lower demand of the second good, *ceteris paribus*. This is exemplarily true for housing, water and fuel as well as communication or education. An increase in the price of housing, water and fuel by 1% reduces the demand in communication by 2.7% and education by 1.5%, respectively. The consumption good miscellaneous goods and services is, on the other hand, a substitute for the consumption good housing, water and fuel. A price increase in housing, water and fuel by 1% leads to an increase in the demand for miscellaneous goods and services by 1.4%; insurance

and financial services being included in the latter consumption category. The price elasticity was consequently used to calculate the coefficients for the price variable γ_{ij}^* of the combined model (11), to be able to simulate the effects of the demographic changes on private consumption.

Scenario analysis

The combined estimated demand model allows the simulation of possible effects of demographic changes on private consumption in Austria and its regions. In the following chapter the results of four chosen scenarios are shown to demonstrate possible effects. Scenario 1 considers the consequences of the ageing of the Austrian population on its consumption structure in an isolated way. In scenario 2 the projected development of the household size is additionally taken into consideration. These two scenarios show the direct effects of the on-going demographic development on private consumption. Scenario 3 takes a possible redistribution of income as an indirect effect of the demographic changes into account, while scenario 4 includes potential price changes as well. The supply side is not considered within the analysis, the model being a partial equilibrium one. Furthermore, constant propensities to consume and preferences of households by age group are assumed. The time period of the simulation ranges from 2010 to 2030.

The results of scenario 1 and 2 are demonstrated in Table 4. As can be seen for scenario 1, the ageing of the population leads to an increase in the consumption shares of food and non-alcoholic beverages (+0.58 percentage points), housing, water and fuel (+0.52 pp), miscellaneous goods and services (+0.28 pp), as well as health (+0.19 pp). Contrarily, the consumption categories transport (-0.76 pp), restaurants and hotels (-0.27 pp) as well as recreation and culture (-0.22 pp) loose in significance. These results correspond with previous empirical studies and theoretical expectations, according to which the consumption shares in food and non-alcoholic beverages, as well as housing, water and fuel increase and expenditures for transport, restaurants and hotels decrease. This can mainly be explained by an extended leisure time spent at home and a reduction of work-related expenses in higher ages. Furthermore, a person's health condition seems to be of significance, often leading to reduced mobility and increased expenditures for health as well as social services, the latter being included in the consumption group of miscellaneous goods and services.

If the projected decrease of household size is moreover considered, as done in scenario 2, the development of the consumption structure up to 2030 is hardly different. The same consumption groups show an increase and decrease in

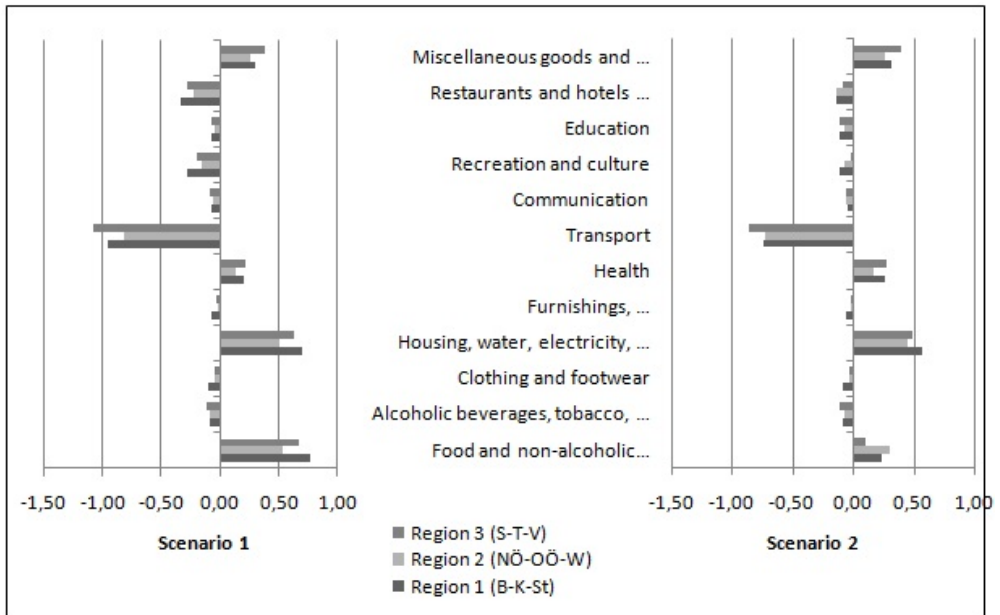
significance, respectively, as in scenario 1, but the intensity of the effect is lower in the majority of cases. The consumption share in food and non-alcoholic beverages increases by 0.21 percentage points, while the decrease of the category transport amounts to 0.61 percentage points. The highest rise in consumption share in scenario 2 is seen for the consumption good housing, water and fuel (+0.43 pp), corresponding to higher costs per capita due to the reduced household size. The calculated changes in consumption structure in scenario 1 and 2 seem rather low. But one has to consider that with total private consumption amounting to € 151.86 billion in 2010 according to NA, an increase of 0.21 percentage points for the consumption share in food and non-alcoholic beverages would already lead to additional expenditures of € 318.91 million within the mentioned category.

Table 4: Modelling Results Scenario 1 and 2: Development of Consumption Structure 2010-2030 at National Level

	Scenario 1			Scenario 2		
	2010	2030	Δ	2010	2030	Δ
Food and non-alcoholic beverages	13.90%	14.49%	0.58	13.90%	14.12%	0.21
Alcoholic beverages, tobacco, etc.	2.96%	2.88%	-0.08	2.96%	2.88%	-0.08
Clothing and footwear	5.28%	5.20%	-0.07	5.28%	5.21%	-0.07
Housing, water and fuel	23.97%	24.49%	0.52	23.97%	24.40%	0.43
Furnishings, household equipment, etc.	5.79%	5.73%	-0.05	5.79%	5.75%	-0.04
Health	3.32%	3.51%	0.19	3.32%	3.55%	0.23
Transport	13.97%	13.21%	-0.76	13.97%	13.35%	-0.61
Communication	2.75%	2.70%	-0.06	2.75%	2.72%	-0.03
Recreation and culture	12.27%	12.05%	-0.22	12.27%	12.18%	-0.10
Education	0.66%	0.60%	-0.06	0.66%	0.57%	-0.09
Restaurants and hotels	5.53%	5.27%	-0.27	5.53%	5.40%	-0.13
Miscellaneous goods and services	9.59%	9.87%	0.28	9.59%	9.88%	0.28

Source: Own calculations

Figure 1: Regional Results - Scenario 1 & 2



Source: Own calculations

Figure 1 shows the results for scenario 1 and 2 on regional level. According to the modelling results, from 2010 to 2030 the biggest effects of the ageing of the population on the consumption structure in Austria are to be expected in region 3 (S-T-V) and region 1 (B-K-St). This can be explained by the comparable fast ageing process of the mentioned regions within the observation period. Accordingly, the lowest effects are to be expected in region 2 (NÖ-OÖ-W). As visible in figure 1, this pattern is also given for scenario 2, which considers the projected reduction in household size, additionally. A comparison of the results of both scenarios shows also on regional level an - in general - lower intensity of the effects in scenario 2.

After the investigation of the direct effects of the demographic changes on the consumption structure in Austria, in scenario 3 and 4 possible changes in income and prices are considered. For the income distribution, the assumption is made that the ageing of the population will lead to a shortage of workers and higher wages for younger cohorts in the long run. Following Deutsche Bank Research (2007) for scenario 3, in addition to the ageing of the population and the development of the household size, an annual increase of income by 2.0 percentage points, 1.5 percentage points and 1.0 percentage point is assumed for households below 40

years, 40 to 59 years and above 59 years, respectively. It is supposed that the additional income is used for consumption purposes as a whole. For the price development from 2010 to 2030 in scenario 4, the average annual price development of the 12 considered consumption categories in the past (from 1999, the year of the launch of the Euro, to 2009) was taken as a basis.

The average annual price increase from 1999 to 2009 amounted to 2.0% in Austria, according to the Consumer Price Index (CPI) 1986. A development above the average is seen for the consumption categories education (+4.3%), housing, water and fuel (+3.1%), alcoholic beverages, tobacco, etc. (+3.0%), miscellaneous goods and services (+2.7%), restaurants and hotels (+2.6%), food and non-alcoholic beverages (+2.4%), health (+2.2%), as well as transportation (+2.1%). Below average was the price development of the consumption groups, furnishing, household equipment, etc. (+1.4%), clothing and footwear (+0.9%), recreation and culture (+0.7%), as well as the category communication, being the only one showing an average price reduction of 3.1% per year. For scenario 4, the described price trends are assumed to continue from 2010 to 2030. From 1999 to 2009 household income has been adjusted to inflation by approx. 65%. As a similar inflation-adjustment is also expected for the coming years, only the remaining price increase is considered. As a differentiation of prices on regional level is not possible due to missing data, the described price trends are used for the national as well as the regional level.

Table 5. shows the results for scenario 3 and scenario 4 on national level. As visible for scenario 3, if the ageing of the population, the changes in household size as well as an income redistribution are considered the effects are larger and different in direction in many cases as compared to the results so far. Now the consumption group transport shows the highest increase in significance of 2.19 percentage points, in contrast to its high decrease in consumption share in scenarios 1 and 2. This reversed effect can be explained by the greater increase of income in younger age cohorts and the high income elasticity for transport in the age groups below 70 years (between 1.74 and 1.96, as shown in table 2). Contrarily, the highest loss in relative consumption can be seen for the categories housing, water and fuel (-2.80 pp) and food and non-alcoholic beverages (-2.19 pp), as both are considered as necessities for households in all age groups, leading to an increase in consumption in a lower proportion compared to the rise in income. For all other consumption groups the effects are significantly lower; especially for communication (-0.01 pp) and education (-0.10 pp) the effects seem negligible.

If the ageing of the population, the changes in household size, the income redistribution as well as price trends are included, we find the highest increase in transportation (+2.17 pp) again, followed by the consumption category restaurants and hotels (+1.06 pp). The biggest difference compared to scenario 3 is the increase in housing, water and fuel by 0.60 pp (compared to a decrease of 2.80 pp in scenario 3). This can be led back to the fact that although the price of this category increases above-average, the decrease in consumption relative to the other goods is low because of the good being a necessity. The highest decrease in consumption can be found for miscellaneous goods and services (-2.29 pp), food and non-alcoholic beverages (-1.29) and communication (-1.25). The reduction of the consumption good miscellaneous goods and services is mainly due to its relatively high price increase, while the smaller reduction of the budget share for food and non-alcoholic beverages compared to scenario 3 is caused by the category being a necessity. As the price elasticity for communication is positive, the price fall causes a decrease of consumption here. Completely negligible are the effects with price changes included for the consumption group education with a reduction of 0.02 pp.

Table 5: Modelling Results Scenario 3 and 4: Development of Consumption Structure 2010-2030 on National Level

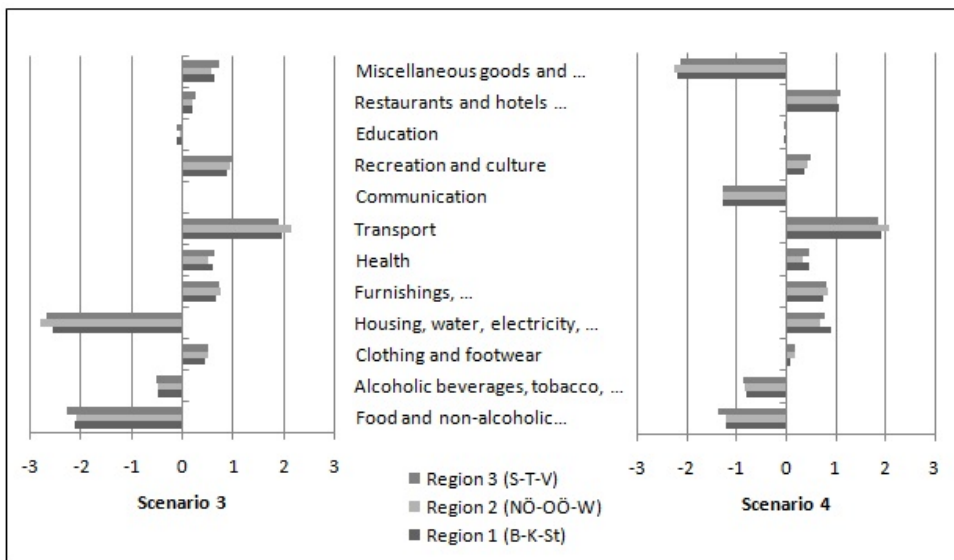
	Scenario 3			Scenario 4		
	2010	2030	Δ	2010	2030	Δ
Food and non-alcoholic beverages	13.90%	11.71%	-2.19	13.90%	12.61%	-1.29
Alcoholic beverages, tobacco, etc.	2.96%	2.46%	-0.49	2.96%	2.14%	-0.82
Clothing and footwear	5.28%	5.74%	0.46	5.28%	5.40%	0.12
Housing, water and fuel	23.97%	21.17%	-2.80	23.97%	24.66%	0.69
Furnishings, household equipment, etc.	5.79%	6.49%	0.70	5.79%	6.59%	0.80
Health	3.32%	3.88%	0.56	3.32%	3.75%	0.43
Transport	13.97%	16.15%	2.19	13.97%	16.14%	2.17
Communication	2.75%	2.74%	-0.01	2.75%	1.50%	-1.25
Recreation and culture	12.27%	13.18%	0.90	12.27%	12.69%	0.41
Education	0.66%	0.57%	-0.10	0.66%	0.64%	-0.02
Restaurants and hotels	5.53%	5.73%	0.20	5.53%	6.59%	1.06
Miscellaneous goods and services	9.59%	10.18%	0.58	9.59%	7.30%	-2.29

Source: Own calculations

The results on regional level differ only marginally from those on national level, as visible in figure 2. Nevertheless, for the consumption groups which show the greatest

delta from 2010 to 2030 the highest effects are seen in region 2 (NÖ-OÖ-W) in both scenarios 3 and 4. In region 2 the effects of the demographic changes on the consumption structure were comparable low, as shown in scenario 1 and 2. The larger consequences in region 2 in scenario 3 and 4 can be explained by the greater share of people in younger age cohorts in the considered region. In 2030, the share in households with a representative below 60 years will be higher compared to region 1 (B-K-St) and region 3 (S-T-V) by 5.8% and 2.6%, respectively. Furthermore, figure 2 highlights the reversed effect for the consumption share of housing, water and fuel and the (higher) loss in significance of the consumption groups miscellaneous goods and services as well as communication with potential price changes considered.

Figure 2: Regional Results - Scenario 3 & 4



Source: Own calculations

Conclusion

In order to simulate potential effects of demographic changes on private consumption, a demand system which allows for a differentiation of households by age and size was built and estimated for Austria. The results show that the projected ageing of the population and reduction of household size has positive effects on the consumption shares of food and non-alcoholic beverages, housing, water and fuel, health, as well as miscellaneous goods and services. On the contrary, the consumption category transport will lose the highest shares in total consumption up to 2030. The investigation also reveals that potential indirect effects of the demographic change in the sense of changes in the income distribution are for some consumption categories higher in intensity and differ in direction. A potential change in the income distribution due to the ageing of the population leads therefore to greater changes in the consumption structure in Austria than direct effects of the demographic trends of an ageing population and a reduction in household size.

The paper indicates the influence of the factor age on the structure of private consumption in Austria. Age-specific differences in private consumption are hardly considered in existing econometric models which are used for analyses and projections of the Austrian economy so far. The estimated age-specific demand equations allow for the inclusion of demographic-induced effects on the demand side of the economy. However, the built model shows some drawbacks too: the simulation is based on the assumption of stable preferences and propensities to consume of households by age. This is rather questionable, as it can be expected that households of a specific age group will consume different goods and services in 2030 compared to 2010 – especially under the consideration of technological progress. The inclusion of cohort trends seems therefore of high significance, but the low number of executed consumer expenditure surveys in Austria, as well as differences in methodologies complicate the investigation of time trends. An analysis of the data of the latest, comparable consumer expenditure surveys does not show any clear trends so far (see Aigner-Walder, 2012, p. 193).

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Appendix

Table A1: Estimation Results, Cross-Sectional Model, National Level

	Food and non-alcoholic beverages	Alcoholic beverages, tobacco, etc.	Clothing and footwear	Housing, water and fuel	Furnishing, household equipment, etc.	Health	Transport	Communication	Recreation and culture	Education	Restaurants and hotels	Miscellaneous goods and services
α_i^C	0.633 ***	0.182 ***	-0.111 ***	1.220 ***	-0.238 ***	-0.019	-0.750 ***	0.046	-0.094 *	0.062 ***	0.064	0.004
β_1^C	-0.071 ***	-0.019 ***	0.021 ***	-0.129 ***	0.039 ***	0.006 *	0.120 ***	0.000	0.028 ***	-0.007 ***	0.003	0.010 **
κ_{i2}	-0.010	-0.001	-0.004	0.017	-0.009	0.007 *	-0.007	0.002	-0.001	0.007 ***	0.002	-0.003
κ_{i3}	-0.017 **	0.002	-0.002	0.021 *	-0.013 *	0.004	-0.011	0.002	0.007	0.008 ***	0.004	-0.005
κ_{i4}	-0.014 **	-0.002	0.002	0.018	-0.016 **	0.007	-0.027 *	0.000	0.015 *	0.009 ***	0.013 *	-0.004
κ_{i5}	-0.024 ***	0.007	-0.010	0.007	-0.005	0.001	-0.018	0.001	0.020 **	0.007 ***	0.013 *	0.002
κ_{i6}	-0.029 ***	0.021 ***	-0.002	0.008	-0.025 ***	0.007	-0.046 ***	0.006	0.012	0.006 ***	0.031 ***	0.010
κ_{i7}	-0.020 *	0.021 ***	0.002	0.004	-0.031 ***	0.028 **	-0.047 **	-0.005	0.005	0.006 ***	0.008	0.029 **
μ_{i2}	0.078	0.004	0.034	-0.114	0.057	-0.051 *	0.034	-0.028	0.031	-0.056 ***	-0.019	0.030
μ_{i3}	0.153 ***	-0.013	0.013	-0.147 *	0.090 *	-0.030	0.070	-0.031	-0.044	-0.069 ***	-0.040	0.048
μ_{i4}	0.133 **	0.021	-0.020	-0.116	0.118 **	-0.045	0.176	-0.014	-0.103	-0.078 ***	-0.117 **	0.046
μ_{i5}	0.220 ***	-0.065	0.068	-0.036	0.043	0.006	0.103	-0.021	-0.140 **	-0.063 ***	-0.126 **	0.011
μ_{i6}	0.260 ***	-0.170 ***	0.024	-0.044	0.176 ***	-0.026	0.287 **	-0.064 *	-0.091	-0.058 ***	-0.264 ***	-0.030
μ_{i7}	0.182 **	-0.179 ***	-0.024	-0.004	0.223 ***	-0.156 **	0.288 **	0.026	-0.047	-0.059 ***	-0.095	-0.156 *
σ_{i2}	0.045 ***	0.005 ***	-0.001	0.004	-0.003	-0.002	-0.014 ***	-0.004 **	-0.008 **	0.001 ***	-0.018 ***	-0.005

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σ_{i3}	0.072 ***	0.003	-0.002	0.019 ***	-0.003	-0.008 ***	-0.024 ***	-0.005 **	-0.028 ***	0.004 ***	-0.030 ***	0.001
σ_{i4}	0.089 ***	0.000	0.000	0.015 ***	-0.005	-0.009 ***	-0.036 ***	-0.007 ***	-0.022 ***	0.008 ***	-0.031 ***	-0.002
σ_{i5}	0.105 ***	0.002	-0.004	0.031 ***	0.003	-0.011 ***	-0.044 ***	-0.005 **	-0.037 ***	0.007 ***	-0.039 ***	-0.009
σ_{i6}	0.127 ***	0.003	-0.002	0.030 ***	-0.008	-0.015 ***	-0.037 ***	-0.007 *	-0.051 ***	0.007 ***	-0.039 ***	-0.007
R^2	0.359	0.061	0.031	0.272	0.045	0.055	0.202	0.016	0.062	0.075	0.065	0.040

Source: Own calculations

Note: OLS-estimates. Significance levels at 1%, 5% and 10% are indicated by ***, ** and *, respectively.

Table A2: Estimation Results, Cross-Sectional Model With Regional Differentiation

	Food and non-alcoholic beverages	Alcoholic beverages, tobacco, etc.	Clothing and footwear	Housing, water and fuel	Furnishing, household equipm., etc.	Health	Transport	Communication	Recreation and culture	Education	Restaurants and hotels	Miscellaneous goods and services
α_i^C	0.635 ***	0.182 ***	-0.105 ***	1.229 ***	-0.240 ***	-0.022	-0.734 ***	0.041	-0.117 **	0.061 ***	0.056	0.013
β_i^C	-0.071 ***	-0.019 ***	0.021 ***	-0.130 ***	0.040 ***	0.006 *	0.120 ***	0.000	0.029 ***	-0.007 ***	0.003	0.009 **
κ_{i2}	0.077	0.004	0.031	-0.120	0.059	-0.049	0.026	-0.025	0.044	-0.055 ***	-0.015	0.025
κ_{i3}	0.152 ***	-0.014	0.009	-0.156 *	0.092 *	-0.028	0.065	-0.028	-0.032	-0.068 ***	-0.036	0.043
κ_{i4}	0.131 **	0.021	-0.026	-0.125	0.120 **	-0.043	0.163	-0.009	-0.083	-0.076 ***	-0.110 *	0.038
κ_{i5}	0.218 ***	-0.065	0.065	-0.041	0.044	0.008	0.094	-0.018	-0.128 *	-0.062 ***	-0.122 **	0.006
κ_{i6}	0.258 ***	-0.170 ***	0.017	-0.053	0.178 ***	-0.023	0.269 **	-0.058	-0.066	-0.057 ***	-0.255 ***	-0.040
κ_{i7}	0.180 **	-0.179 ***	-0.029	-0.011	0.224 ***	-0.154 **	0.273 **	0.031	-0.026	-0.058 ***	-0.087	-0.165 *
μ_{i2}	-0.010	-0.001	-0.004	0.018	-0.009	0.007 *	-0.006	0.002	-0.003	0.007 ***	0.001	-0.002
μ_{i3}	-0.017 **	0.002	-0.002	0.022 **	-0.014 *	0.004	-0.011	0.002	0.006	0.008 ***	0.004	-0.004
μ_{i4}	-0.014 **	-0.002	0.003	0.019	-0.017 **	0.007	-0.026 *	-0.001	0.012	0.009 ***	0.012 *	-0.003
μ_{i5}	-0.024	0.007	-0.009	0.007	-0.006	0.001	-0.017	0.000	0.018	0.007	0.012	0.003

μ_{16}	*** -0.028	0.021	-0.001	0.010	-0.025	0.007	-0.044	0.005	0.009	** 0.006	*** 0.030	* 0.012
μ_{17}	*** -0.019	*** 0.021	0.003	0.005	*** -0.031	** 0.028	*** -0.045	** -0.006	0.002	*** 0.006	*** 0.007	** 0.030
σ_{12}	* 0.045	*** 0.005	-0.001	0.004	-0.003	-0.002	-0.014	-0.004	-0.008	0.001	-0.018	-0.005
σ_{13}	*** 0.072	0.003	-0.003	0.019	-0.003	-0.008	-0.025	-0.005	-0.027	0.004	-0.030	0.001
σ_{14}	*** 0.088	0.000	-0.001	0.015	-0.005	-0.009	-0.036	-0.007	-0.021	0.009	-0.030	-0.003
σ_{15}	*** 0.105	0.002	-0.004	0.030	0.003	-0.010	-0.045	-0.005	-0.035	0.008	-0.038	-0.009
σ_{16}	*** 0.126	0.003	-0.003	0.030	-0.008	-0.015	-0.040	-0.007	-0.048	0.007	-0.038	-0.008
τ_{12}	-0.002	0.001	-0.004	-0.003	0.001	0.002	-0.015	0.004	0.018	0.001	0.007	-0.008
τ_{13}	-0.002	0.003	0.000	0.010	-0.002	-0.001	-0.019	0.002	0.011	-0.001	0.005	-0.007
R^2	0.359	0.062	0.031	0.273	0.045	0.055	0.205	0.018	0.068	0.076	0.066	0.042

Source: Own calculations

Note: OLS-estimates. Significance levels at 1%, 5% and 10% are indicated by ***, ** and *, respectively.

Table A3: Estimation Results, Time-Series Model

	Food and non-alcoholic beverages	Alcoholic beverages, tobacco, etc.	Clothing and footwear	Housing, water and fuel	Furnishing, household equipment, etc.	Health	Transport	Communication	Recreation and culture	Education	Restaurants and hotels
α_i^T	0.107 ***	0.066 ***	0.084 ***	0.143 ***	0.061 ***	0.034 ***	0.140 ***	0.069 ***	0.130 ***	0.006 ***	0.104 ***
β_i^T	-0.051 ***	0.044 ***	-0.049 ***	-0.058 **	-0.028	0.019 *	0.049 **	0.164 ***	0.068 ***	0.004	-0.011
γ_{11}	0.086 ***	0.022 ***	0.041 ***	-0.110 ***	-0.033 ***	-0.014 ***	0.012	-0.021 ***	-0.018 **	-0.002	0.056 ***
γ_{12}	0.022	0.071	0.017	0.020	0.011	-0.014	-0.032	0.020	-0.011	0.006	-0.073

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γ_{i3}	0.041 ***	0.017 ***	-0.029 *	-0.032 **	0.055	-0.003 ***	0.001 ***	-0.006 ***	0.031	-0.010 **	-0.017 ***
γ_{i4}	-0.110 ***	0.020 *	-0.032 ***	0.080 ***	-0.021 ***	0.034 ***	-0.028 **	-0.030 ***	-0.008 ***	-0.010 ***	-0.006 *
γ_{i5}	-0.033 ***	0.011 **	0.055 ***	-0.021 **	-0.046 *	-0.010 ***	0.023 **	-0.003 ***	-0.009 ***	-0.009 ***	0.039 **
γ_{i6}	-0.014 ***	-0.014 ***	-0.003 ***	0.034 ***	-0.010 *	0.006 ***	-0.026 ***	0.006 ***	0.028 ***	0.007 ***	-0.015 ***
γ_{i7}	0.012 ***	-0.032 ***	0.001 ***	-0.028 **	0.023 **	-0.026 ***	0.055 ***	0.001 ***	-0.014 ***	-0.002 ***	-0.010 ***
γ_{i8}	-0.021 ***	0.020 ***	-0.006 ***	-0.030 ***	-0.003 ***	0.006 ***	0.001 ***	0.035 ***	0.007 ***	0.003 ***	-0.025 ***
γ_{i9}	-0.018 **	-0.011 ***	0.031 ***	-0.008 ***	-0.009 ***	0.028 ***	-0.014 ***	0.007 ***	0.024 ***	-0.002 ***	0.031 **
γ_{i10}	-0.002 **	0.006 **	-0.010 ***	-0.010 ***	-0.009 ***	0.007 ***	-0.002 ***	0.003 ***	-0.002 ***	-0.001 ***	0.021 ***
γ_{i11}	0.056 ***	-0.073 ***	-0.017 *	-0.006 **	0.039 **	-0.015 ***	-0.010 ***	-0.025 ***	0.031 **	0.021 ***	-0.009 ***
γ_{i12}	-0.020 **	-0.037 **	-0.048 ***	0.110 ***	0.004 ***	0.001 ***	0.022 ***	0.013 ***	-0.058 ***	0.001 ***	0.010 ***
R^2	0.966	0.932	0.992	0.988	0.938	0.871	0.522	0.864	0.914	0.966	0.902

Source: Own calculations

Note: SUR-estimates. Significance levels at 1%, 5% and 10% are indicated by ***, ** and *, respectively.

Real Exchange Rate and Real Economic Fundamentals in Transition Economy of Bosnia and Herzegovina (BH)

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Abstract: *The paper estimates Equilibrium Real Exchange Rate (ERER) using co-integration methodology to observe relationship between Real Exchange Rate (RER) and selected economic fundamental variables over two different sample periods. Time period of observation influences results and we observe change in signs and direction of relationship between fundamentals and RER suggesting that fundamentals and RER do not have a stable relationship and direction of influence. The findings suggest that RER is not a significant transmission mechanism for real economy towards achieving external balance as RER depreciation is not associated with an improvement in resource balance. Therefore, RER does not have a postulated relationship with resource balance variable. More appreciated RER is associated with an improvement in the external balance of the BH economy which is opposite of an expected role of RER depreciation in bringing economy towards external equilibrium. However, pressures on RER sustainability exist due to negative resource balance. Potential disequilibria therefore could not be caught with the existing data which cover the post-war period only, and were marked by continuous negative resource balances.*

Keywords: *Open Economy Macroeconomics; Real Exchange Rates; Transition Economy; Bosnia and Herzegovina (BH); Liberalization.*

JEL Classification: *F41, F31, C13*

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Introduction

Evidence of nonstationarity in Real Exchange Rate (RER) was the basis of work which viewed Equilibrium Real Exchange Rate (ERER) as driven by real economic fundamentals in transition economies. Pons and Lacasta (2003) have used error correction equation and have estimated long-run cointegration equation of the ERER and the corresponding dynamic error correction specification which strongly corroborated the model and produced fairly consistent results across the countries under study. Utilizing the error correction method and corresponding dynamic error specification Omerbegovic (2005) has found similar results for Bosnia and Herzegovina (BH).

The impact of the fundamentals on the RER behavior was suggested to be dependent on the time horizon studied (Egert, 2006).

In this paper, the relationship between RER and fundamental economic variables is examined using the methodology of co-integration and error correction model as found in Omerbegovic (2005) and Omerbegovic-Arapovic (2009). The findings suggest that there are changes in direction of relationship between certain fundamental variables and RER for BH depending on the sample period under consideration. This suggests that direction of relationship between fundamentals and RER is not stable over time.

The attempt to estimate ERER from observable data on RER and economic fundamentals of BH due to existing nonstationarity in RER has resulted in estimated slight RER overvaluation in 2005, that is, before the financial and economic crisis of 2007 (Omerbegovic, 2009). Utilizing same methodology this paper finds support of undervaluation of RER in the first half of 2012. Counterfactual estimation of fundamentals in order to estimate misalignment is resulting in RER undervaluation due to the observed changed direction of relationship between the resource balance variable and RER, so that improvement in resource balance variable is associated with required appreciation in RER, opposite to postulated theoretical relationship, suggesting that RER is not a significant transmission mechanism in achieving external balance.

The findings show that estimated RER misalignment based on co-integration methodology, which uses data over the period of serious external and internal disequilibrium in economy of BH, can't be determined from observable data on

macroeconomic fundamental variables and RER behavior over the sample period, suggesting that RER misalignment in transition is difficult to detect using a time series methods. However, this does not mean that there are no pressures on RER due to fundamentals. Our findings also suggest that other factors, such as monetary phenomena should be examined as potential causes of RER nonstationarity in BH as Kanas (2009) has suggested that shifts between stationary and non-stationary epochs in RER behavior could be mainly determined by the monetary phenomena.

The paper starts by examination of RER nonstationarity by estimation of ERES of BH in order to test the hypothesis of RER misalignment in the middle of 2012 and establish the role of real fundamental variables in RER behavior. Firstly, the literature review on real exchange rate behavior and patterns of real exchange rate behavior observed in transition economies is presented. Section on methodology provides analytical framework used in calculating ERES for BH. It is followed by empirical analysis of estimation of RER misalignment in BH over the two different time horizons. The test of relationship between RER and economic fundamentals of BH extends time series analysis from Omerbegovic (2005) to examine the stability of relationship between real economic fundamentals and RER behavior enabling us to test the effect of time horizon on relationship between fundamental economic variables and RER for BH. Overall, we do not see a large explanatory power of fundamental variables in explaining RER fluctuation in the second period, which is consistent with findings of Kanas (2009) who suggests different phases of RER behavior, where RER could have entered stationary phase compared to the first period. This is followed by discussion of results and concluding remarks.

Literature Review: Equilibrium Real Exchange Rates in Transition Economies

Equilibrium Real Exchange Rate (ERER) is the real exchange rate associated with internal and external balance of the economy and the topics of equilibrium real exchange rate and exchange rate misalignment in transition economies of Central and Eastern Europe (CEE) has been widely researched due to importance of this transmission mechanism in achieving equilibrium for the countries that have started transformation process from planned to market based economies in the late 1980s and early 1990s. In other words, it is very important question whether their currencies are fairly valued at a given point in time. Various methods are used in calculating equilibrium exchange rates, which have provided very different results in terms of conclusions of relationship of fundamental economic variables and real exchange rate. However the single equation approach to determining ERES has been

identified to be applicable to determining RER misalignment both in short-run and long-run (Egert et.al., 2005)

The overview of these studies suggests that transition countries could go through the period of trend appreciation of the currency, so that during the periods of rapid change in relative economic development levels, the ERES may exhibit trending behavior. (Froot and Rogoff, 1994) It has also been observed that there is uncertainty related to fundamentals and that relationship between fundamentals and real exchange rate is not stable over time (Egert, 2006), which corroborates the argument of phases in real exchange rate behavior.

Application of single equation approach to ERES determination has been used to determine potential real exchange rate misalignment in transition countries using real exchange rate as dependent variable and explanatory variables which depend on the theoretical underpinnings of the research methodology. ERES which rests on counterfactual estimation of sustainable level of fundamentals is the basis of NATREX model in which the evolution of net foreign assets is endogenous, so that if investment rises in the open sector, capital inflows, reflected in a decline in net foreign assets, cause the real exchange rate to appreciate in the medium-term. In the long-run, when investment starts working in the open sector, the trade balance improves, resulting in an increase in net foreign assets, and producing an appreciation of the real exchange rate in the second phase. Egert, Lahreche-Revil and Lommatzsch (2003) also provide explanation that countries can have different direction of relationship between net foreign assets (resource balance) and real exchange rate due to the phase in which they are. In the catch-up process they may have a negative steady-state net foreign asset position. In other words, in the medium term, they finance their growth via foreign capital. Strong capital inflows appreciate the real exchange rate in this phase. However, once the desired long-term foreign liabilities position is attained, the countries have to start servicing their debt. Thus, for any additional increase in net foreign liabilities, the real exchange rate depreciates. The panel of transition countries examined indeed confirmed postulated appreciation associated with negative resource balance while variable was positive for OECD countries, indicating depreciation of real exchange rate associated with worsening of the resource balance, which was taken to be reflecting the long run behavior of the transition economies.

In the literature openness is associated with decreasing trade barriers, which raises imports more than exports. The deterioration in the trade balance would in this context depreciate real exchange rate. (Kim and Korhonen, 2005)

Another important factor to consider in real exchange rate behavior in transition economies is role of regulated prices, as services such as public transport, communication, energy and water supply, communal services and government services have a large share in overall economy and could have been left unchanged during price liberalization, resulting in high inflation at the outset of the transition process. According to Zavoico (1995) in setting the price of regulated sectors only operational costs were considered initially because the capital stock of the sectors concerned was inherited from the communist era and because of political considerations. Eventually, once the general price liberalization is over, the progressive replacement of the capital stock at market prices, partly through privatization, led to huge increases in regulated prices because the cost of capital had to be taken into account as well. Therefore, price increases as an adjustment due to liberalization, are an additional argument in support for trend appreciation experienced in transition economies in initial phase.

The above studies suggest that real exchange rate in transition could be going through changes in relationship between fundamentals and RER, which have important implications for policy making. RER settling in its long-term position will mean more depreciated level of RER required in order to service the debt obligations that have accumulated. There are limited studies on real exchange rate behavior in BH. In Omerbegovic (2005) real exchange rate of BH is related to fundamental variables of resource balance, openness, government consumption as share of GDP and debt over the period of 2002 to 2005, which has indicated that there was slight real exchange rate overvaluation in 2005. However, this could have been equilibrating phenomena as well.

In this paper the study of real exchange rate in BH is extended over different time periods in order to answer the question as to whether the level of real exchange rate is appropriate at this point in time. The paper also attempts to provide explanation towards the phase in which BH real exchange rate behavior is in relation to the above mentioned postulated phases in the literature for transition economies. Due to importance of this transmission mechanism in reaching external and internal balance the paper looks at the behavior of BH real exchange rate, testing stability of

relationship of fundamentals and real exchange rate over the period of 2002 to 2012 and estimating RER misalignment in middle 2012.

Methodology: The Cointegration Approach to ERES in BH

The ERES can be estimated from a single equation- relating RER and fundamentals- which is a reduced form solution of an unspecified simultaneous equation system of the theoretical models of the likes of Edwards (1989), Lim and Stein (1995), and Montiel (1999) developed in Omerbegovic Arapovicⁱ (2009).

The theoretical model provides for the postulated effects of change in fundamental determinants of trade policy stance, external terms of trade, composition of government spending, sectoral productivity differentials and resource balance and ERES. The improvement in the external terms of trade, increase in productivity differential in favor of traded goods and increased government consumption of nontrade goods are expected to cause ERES appreciation. The relaxation of trade barriers and improvement of resource balance are expected to cause ERES depreciation. Adopted empirical methodology is designed to capture this long-term relationship between economic fundamentals and real exchange rateⁱⁱ.

The Empirical Model of ERES Estimation: Two Step Engle-Granger (1987) Cointegration and Error Correction Mechanism

The empirical model consistent with adopted theoretical framework for ERES estimation is consistent with Two Step Engle-Granger (1987) Cointegration and Error Correction Mechanism as shown in Kemme and Royⁱⁱⁱ (2002).

Translated into stochastic terms the features of the theoretical model of ERES behavior requires that the disturbance term w_t in Equation 1 is a mean-zero stationary random variable.

$$e_t^* = bF_t^* + w_t \quad (1)$$

Where b is the cointegrating vector and w_t is an uncorrelated random disturbance.

Based on Engle and Granger^{iv} (1987) who demonstrated an equivalence between cointegration and error correction for nonstationary variables in case on nonstationary variables the model implies that RER has a reduced-form error correction representation (Equation 2), which allows short run dis-equilibrium to be

treated as ‘equilibrium error’ and we use it to tie short-term behavior of RER to its long-run value.

$$de_t = a + b dF_t + c u_{t-1} + z_t \quad (2)$$

Where d denotes first difference; u_{t-1} is the one-period lagged value of the residual from regression (Equation 1), the empirical estimate of the equilibrium error term; and z is the error term with usual properties.

Calculating ERES

After long run parameters b of Equation 1 are estimated using appropriate econometric tools given unit root properties of the data series estimation of sustainable fundamentals, F^* , is next step in measurement of ERES. The sustainable fundamentals are then combined with b to arrive at ERES, that is $ERES = bF^*$.

The effect of sustainability of the net capital flows and other fundamentals on ERES in BH is captured in this step. The estimation of the value of sustainable fundamentals involves some methodological issues. Time series based (or data based) permanent values of fundamentals are by nature of construction of cointegration methodology unable to detect substantial misalignment (Baffes, Elbadawi and O’Connell^v, 1999:443). However, in case of BH counterfactual estimation of the variables of debt service to export and net sustainable capital flows^{vi} does not create pressures towards RER devaluation as the estimated direction of influence of these variables is opposite to theoretically postulated relationship, so that increase in these variables results in more appreciated ERES.

In the case of exogenous variables and those that adjust very slowly the time series based estimates of their sustainable values are used along the methodology of Baffes^{vii} et al. (1999) which use moving averages to estimate permanent values of fundamentals in ERES calculation.

The import content of investment already reflected in high value of observed openness variable leaves conclusion that trade policy is already very open (imports and exports to GDP ratio have been above 1 for most of the sample period) and moving average of actual openness variable is used for BH. Government consumption in total expenditure is considered as slower changing so that its

permanent value is obtained as moving average of data series. Moving averages technique is one of simple 3 year moving average for all of the series.

ERER calculation as “sustainable” RER, which is the fitted RER in which the fundamentals have been replaced by their sustainable values^{viii}, enables us to calculate the RER misalignment for BH in the middle of 2012. Given the equilibrium real exchange rate the misalignment can be calculated as:

$$m_t = e_t^* - e_t \quad (3)$$

Once the misalignment is calculated we have determined whether the currency is overvalued or undervalued at present and may make statements about the RER misalignment in BH in 2012.

Empirical Analysis: Estimation of ERER Misalignment in BH

In this section the misalignment of the real exchange rate in BH is estimated for the middle of 2012. We begin by defining and documenting the sources of data. After results of the time series properties of the data are obtained, tests for the existence of co-integrating relationship between the fundamentals and real exchange rate are performed. Estimation of the long run parameters b of the ERER vector ($e_t^* = b \cdot F_t$) using the appropriate econometric tools given the time series properties of the data is then conducted. Lastly, the ERER is calculated given the sustainable values of fundamentals where counterfactual estimate of sustainable resource balance given sustainable net capital flows and time series estimates of slower adjusting fundamentals are combined with the estimated parameters b to calculate the degree of RER misalignment as the difference between the ERER and the actual RER.

Definition and Measurement of the Variables

The variables found in the reduced form single equation are the actual real exchange rate (e_t) and the fundamental determinants of the equilibrium real exchange rate (F_t). Real exchange Rate (RER) or e - is taken as the multilateral trade weighted index which is as a measure of RER used in evaluating competitiveness. It is necessary to use or construct a broad multilateral index of the real exchange rate (Edwards^{ix}, 1989:88), which provides a measure of the degree of competitiveness of a country relative to a group of its trading partners. The Central Bank of Bosnia and

Herzegovina (CBBH) construct of the multilateral index of the real exchange rate is used, which is consistent with the methodology of Edwards (1989: 88).

Openness or OPEN is defined as the ratio of imports (IMP) and exports (EXP) to GDP (GDP): $OPEN = (IMP + EXP) / GDP$.

Resource Balance to GDP Ratio (RESGDP). The value of exports (EXP) minus the value of imports (IMP), divided by the GDP (GDP). Thus $RESGDP = (EXP - IMP) / GDP$.^x

DEBT is the ratio of debt service to exports expressed in percentage.

GOVCON is simply the ratio of government consumption expenditure to total government expenditure.

The data were obtained from two sources: 1) CBBH, 2) the IMF- International Financial Statistics.

Time Series Properties of Data Series

Table 1 presents the results of the standard Augmented Dickey-Fuller (ADF) (1979) statistics and the Philipps-Perron (PP) test (1988), which are used to assess the unit root properties of the data. The MacKinnon critical values (1991) are reported alongside of the results of the ADF and the PP tests.

Table 1: Tests for Stationarity

	ADF	PP	Decision
RER	-3.62	-3.15	I(1)
RESGDP	-1.33	-1.40	I(1)
OPEN	-3.78	-3.80	I(0)
GOVCON	-2.57	-2.37	I(1)
DEBT	-1.02	-3.96	I(1)

Notes: test assumption includes constant in test equation. For the Augmented

Dickey-Fuller statistics (ADF), the MacKinnon critical values are: 1%=-3.62, 5%=-2.94, 10%=-2.60. Critical values for the PP test are: 1%=-3.61, 5%=-2.93, 10%=-2.60. Sample period is 2002Q2 to 2012Q2.

The results obtained from the standard ADF and the PP test suggest that almost all of the variables under consideration exhibit unit root properties, that is, they are integrated of order one and their first differences are stationary.

Test of Cointegration

Since the relevant data series used in the empirical analysis are nonstationary (integrated of order one) it follows that a cointegrating regression can potentially be formed if the series are found to be cointegrated. Table 2 contains the Johansen (1998) test for the number of cointegrating vectors for BH. The Johansen maximum-likelihood procedure which tests for the number of co-integrating vectors in Table 2, shows that there is 1 co-integrating vector for BH over the period of 2001Q1 to 2012Q2, consistent with findings of Omerbegovic (2005) over the shorter time span.

Table 2: BH- Johansen Maximum Likelihood Procedure for Testing the Number of Cointegrating Vectors^{xi}

Null (1)	Likelihood Ratio (2)	Max. eig. Stat. [95% crit] (3)
R=0	0.57	69.82
R<=1	0.40	47.86
R<=2	0.27	29.78
R<=3	0.13	15.50

The variable set is (RER, RESGDP, OPEN, DEBT, GOVCON)

Sample period is 2002Q2 to 2012Q2.

Trace test indicates 1 cointegrating equation(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Testing for Breaks

Since the paper postulates that real exchange rate might be going through different phases in its behavior it tests for breaks in a time series regression function over the sample time period. Using the Chow test it is found that the suggested break point is 2005, which is a year when observation of time series data on resource balance indicates significant improvement in resource balance variable. This could have been situation of resource balance variable moving towards its long term position. The paper reports results of cointegrating equation over the whole sample as well, as these are then considered to be relationships that hold on ‘average’, in the sense that the estimate combines the two different periods. (Stock and Watson, 2012:599)

Besides having these overall ‘average’ results reported, the paper estimates cointegrating equation over two sample periods divided by postulated structural break in data: first sample includes observations from 2001Q1 to 2005Q4 and second sample includes observations from 2006Q1 to 2012Q2. The examination of stationarity and cointegration indicators for these two sample periods indicates that series under examination are nonstationary over these periods and that there are cointegrating equations in these two periods as well.

Estimation of Cointegrating Relationship between RER and Fundamentals

The existence of cointegration between the variables of RER and the fundamentals suggests that the econometric techniques of Cointegration and Error Correction Mechanism are appropriate for estimating the relationship between RER and its fundamental determinants. Table 3 presents estimated cointegrating parameters, b , in using the two step Engle-Granger (1987) cointegration and error correction methodology (1987).

Cointegration implies that the residuals of Equation 1, w_t , are stationary, and this restriction provides a test for cointegration^{xii}. Table 4 provides results of this Engle-Granger (1987) two-step procedure test for cointegration. There is strong evidence of cointegration, as indicated by the unit-root test applied to the estimated residuals: the calculated value rejects nonstationarity in favor of stationarity at standard levels^{xiii}.

Finally, the short-term dynamics of real exchange rate, e , is examined by estimating an error correction model of Equation 2, where residuals from static regression (w_t) in Equation 1, are used in place of the equilibrium error on the right hand side of the error correction equation to tie short-term behavior of RER (e) to its long-run value. Table 5 provides results of estimation of Equation 2 for BH, over the two sample periods.

The findings suggest that the short run effects are generally in the same direction as the long run effects. A crucial parameter in estimation of short-term dynamics is the coefficient of the ERROR (w in Equation 1) in the second step of the Error Correction Procedure, which measures the speed of adjustment of the RER to its equilibrium level. Importantly, the error term is less than one in absolute terms and

statistically significant, hence the equilibrium real exchange rate is stable (Lim and Stein, 1995).

Table 3: Step One Engle-Granger (1987) Cointegration and Error Correction Procedure-Long Run Parameter Estimates: BH

	Sample 2002Q2 to 2005Q4			Sample 2006Q1 to 2012Q2			Sample 2002Q2 to 2012Q2		
	1	2	3	4	5	6	7	8	9
Variable	Coefficient	t-stat	2-tail significant	Coefficient	t-stat	2-tail significant	Coefficient	t-stat	2-tail significant
Coefficient	95.12	4.41	0.0000	105.32	47.49	0.0000	105.02	51.6	0.0000
OPEN	15.45	5.42	0.0173	0.45	2.86	0.8763	1.65	0.78	0.4358
RESGDP	0.13	1.41	0.1868	-0.05	-0.65	0.5204	-0.04	-1.20	0.2350
DEBT	-0.17	-0.86	0.4083	0.11	0.74	0.4619	-0.11	-1.05	0.2972
GOVCON	-0.07	-2.20	0.0332	-0.26	-3.07	0.0058	-0.24	-3.53	0.0011

Dependent variable: RER

Notes column 1 to 3: Adjusted R-Square= 0.7449; Durbin-Watson=1.6745 ADF (e-bf): UROOT (N,0) = -3.06; ADF critical value 5%= -2.92; Sample period is 2002Q2 to 2005Q4 for columns 1 to 3.

Notes column 4 to 6: Adjusted R-Square= 0.1857; Durbin-Watson=1.2362 ADF (e-bf): UROOT (N,0) = -4.64; ADF critical value 5%= -2.99; Sample period is 2006Q1 to 2012Q2.

Notes column 7 to 9: Adjusted R-Square= 0.3106; Durbin-Watson=1.4355 ADF (e-bf): UROOT (N,0) = -4.64; ADF critical value 5%= -2.93; Sample period is 2002Q2 to 2012Q2.

The explicit form of Equation 1 tested is:

$$RER=c(1)+c(2)*OPEN+c(3)*RESGDP+c(4)*GOVCON+c(5)*DEBT+w_t$$

Table 4: Results on Engle-Granger (1987) Two Step Procedure for Testing Cointegration Unit Root Test of the Residuals From the Long Run Relations.

Long run equation 1	Sample 2002Q2 to 2005Q4		Sample 2006Q1 to 2012Q2		Sample 2002Q2 to 2012Q2	
	ADF Test	Order of	ADF Test	Order	ADF Test	Order
	-3.06	I(0)	-4.64	I(0)	-4.64	I(0)

MacKinnon (1991) critical values for rejection of null of no cointegration are -2.92 at 5% level for Sample 2002Q2 to 2005Q4, -2.99 at 5% level for Sample 2006Q1 to 2012Q2 and -2.93 at 5% level for Sample 2002Q2 to 2012Q2.

The important factor in considering the volatility of the model is to observe for serial correlation diagnostic since low Durbin-Watson statistic (DW) values accompanied by high R^2 alert to the potential problem of spurious regression^{xiv}. (Gujarati^{xv}, 1995: 724) There are relatively lower AR^2 values (0.22) accompanied by DW test statistic values of less than two as we observe DW to be 1.23 to 1.67 depending on the sample. Therefore, the problem of spurious regression is not suspected. These results are similar to those found in Baffes et al.^{xvi} (1999) where the same empirical methodology produces results of DW in the range of 1.14 to 1.16, whereas others like AtiqurRahman and Abdul Basher^{xvii} (2002) study for Bangladesh do not report the DW diagnostics test statistic while using similar time series fundamental determinants of ERER and empirical model of two-step ECM.

Table 5: Short Run Dynamics: BH
(Two-Step Engle-Granger (1987) Cointegration And Error Correction Mechanism)

	1	2	3	4	5	6	7	8	9
Variable	Coefficient	t-stat	2-tail	Coefficient	t-stat	2-tail	Coefficie	t-stat	2-tail
Coefficient	0.50	0.08	0.9349	0.02	0.01	0.9873	0.25	0.19	0.850
ERROR(-1)	-0.55	-1.18	0.2708	-0.58	-3.15	0.0052	-0.51	-3.83	0.000
DOPEN	-0.33	-0.05	0.9569	0.12	0.07	0.9422	-0.09	-0.07	0.946
DGOVCON	-0.06	-0.79	0.4505	-0.08	-1.02	0.3194	-0.06	-1.34	0.186
DRESGDP	-0.13	-1.41	0.1942	-0.12	-2.04	0.0548	-0.16	-5.34	0.000
DDEBT	-0.20	-1.59	0.1491	0.06	0.82	0.4180	-0.06	-1.09	0.282

Notes to columns 1 to 3: Dependent variable: DRER; Adjusted R-Square=0.4082; Durbin-Watson= 1.09; Sample period is 2002Q2 to 2005Q4.

Notes to columns 4 to 6: Dependent variable: DRER; Adjusted R-Square=0.5396; Durbin-Watson=1.6657; Sample period is 2006Q1 to 2012Q2.

Notes to columns 7 to 9: Dependent variable: DRER; Adjusted R-Square=0.6203; Durbin-Watson= 1.8374; Sample period is 2002Q2 to 2012Q2.

The explicit form of Equation 2 tested is:

$$dRER=c(1)+c(2)*dRESGDP+c(3)*dDEBT+c(4)*dGOVCON+c(5)*dOPEN+c(6)*W_{(t-1)} +Z_t$$

Calculating ERER and Degree of Misalignment

The ERER is obtained as a fitted value of the estimated long run cointegrating equation using the sustainable values of fundamentals^{xviii}. This ERER is referred to as “sustainable” ERER and is reported in column three of Table 6 for BH for the two step Engle-Granger (1987) Cointegration and Error Correction Mechanism.

Column 1 reports the actual real exchange rate while column 2 presents the fitted exchange rate from the first equation of Table 3 by using actual values of fundamentals. Column 4 shows the gap between the observed and equilibrium real exchange rates using the “sustainable” simulations for the equilibrium rate. The gap between these two series provides a measure of the real exchange rate misalignment. Since RER is measured as index where 100=1, the difference between RER and EREER is equal to percent overvaluation/undervaluation, with the positive sign representing overvaluation and the negative sign indicating undervaluation of RER. Figure 1 depicts graphically the observed, fitted and sustainable RER for BH based on Two Step Engle-Granger (1987) Cointegration and Error Correction Mechanism. The gap between the observed RER and EREER-sustainable represents graphically the percent misalignment for BH for each year from 2001Q1 to 2012Q2 based on the results of the Two Step Engle-Granger (1987) Procedure.

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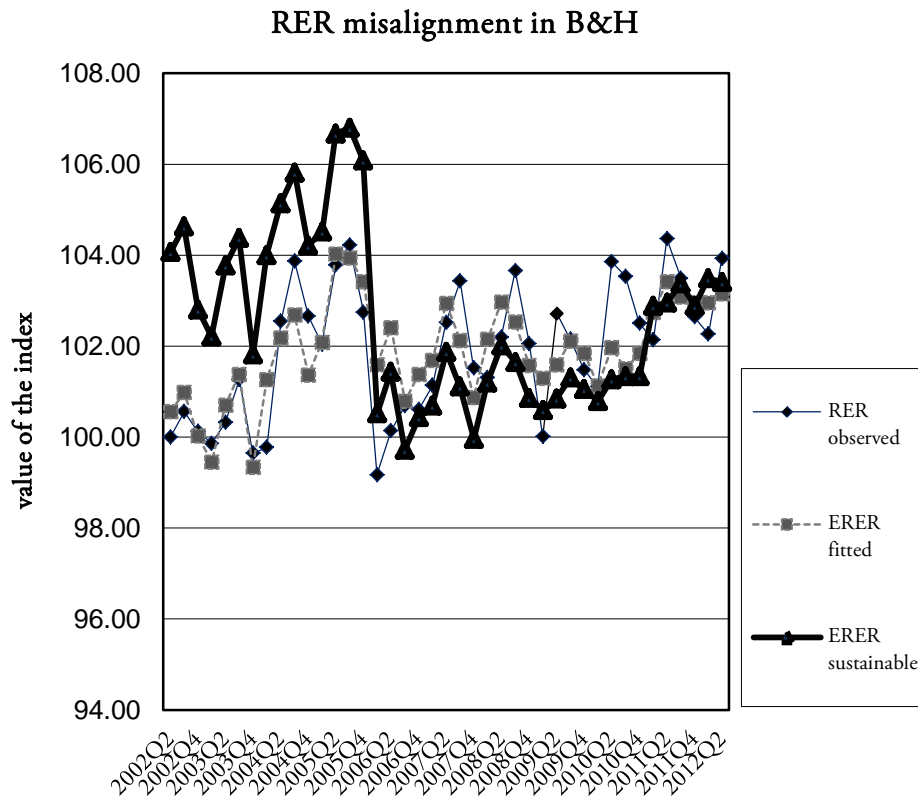
Table 6: Observed and Equilibrium RER Indexes for BH 2002Q2 to 2012Q2 (2002=100) (Two Step Engle-Granger (1987) Cointegration and Error Correction Mechanism)

Column	1	2	3	4
Period	Observed	Fitted	"Sustainable "	Misalignment (%)
2002Q1				
2002Q2	100.00	100.56	104.07	4.07
2002Q3	100.56	100.98	104.63	4.05
2002Q4	100.12	100.03	102.81	2.68
2003Q1	99.87	99.45	102.21	2.34
2003Q2	100.32	100.70	103.77	3.44
2003Q3	101.26	101.38	104.37	3.08
2003Q4	99.65	99.34	101.81	2.17
2004Q1	99.77	101.27	103.99	4.23
2004Q2	102.54	102.19	105.13	2.52
2004Q3	103.87	102.69	105.81	1.86
2004Q4	102.65	101.37	104.21	1.52
2005Q1	102.05	102.09	104.52	2.43
2005Q2	103.79	104.02	106.66	2.77
2005Q3	104.21	103.95	106.79	2.47
2005Q4	102.75	103.41	106.07	3.23
2006Q1	99.17	101.59	100.53	1.36
2006Q2	100.13	102.41	101.44	1.30
2006Q3	100.69	100.78	99.72	-0.97
2006Q4	100.60	101.38	100.44	-0.16
2007Q1	101.14	101.69	100.70	-0.44
2007Q2	102.52	102.94	101.87	-0.63
2007Q3	103.43	102.13	101.12	-2.24
2007Q4	101.52	100.87	99.96	-1.54
2008Q1	101.31	102.15	101.20	-0.11
2008Q2	102.19	102.96	102.01	-0.17
2008Q3	103.66	102.53	101.65	-1.94
2008Q4	102.06	101.57	100.85	-1.18
2009Q1	100.01	101.30	100.59	0.58
2009Q2	102.72	101.59	100.84	-1.83
2009Q3	102.15	102.11	101.31	-0.82
2009Q4	101.48	101.84	101.05	-0.42
2010Q1	101.11	101.13	100.39	-0.31
2010Q2	103.85	101.97	101.14	-2.50
2010Q3	103.53	101.50	100.67	-2.12
2010Q4	102.50	101.84	100.99	-1.13
2011Q1	102.14	102.75	102.02	0.72
2011Q2	104.36	103.42	102.64	-1.34
2011Q3	103.49	103.08	102.28	-0.12
2011Q4	102.64	102.95	102.16	0.24
2012Q1	102.26	102.96	102.27	1.20
2012Q2	103.93	103.15	102.42	-0.50

Note: The observed RER is the one used in the econometric analysis. The fitted RER is the one estimated from the cointegration regression. The "sustainable" RER is the fitted RER in which the fundamentals have been replaced by their sustainable counterparts. The RESGDP sustainable is equal to actual RESGDP adjusted for the change in RESGDP required in case of capital flows outflows comprising 100 percent of foreign portfolio inflows and transfers. The OPEN and GOVCON are given by 3 year moving averages. Following the suggestion made by Klein (1994) we assumed that sustainable debt service to export ratio is at most 20% but slowly increasing from the current levels in view of the higher repayment obligations.

Misalignment is defined as $100(\text{sustainable RER} - \text{observed RER}) / \text{observed RER}$. Misalignment over the sample period 2002Q2 to 2005Q4 and 2006Q1 to 2012Q2 is estimated using parameters presented in Table 3 for the respective sample.

Figure 1: Misalignment – BH (as the Gap Between Real Exchange Rate And EREr) Two Step Engle-Granger (1987) Cointegration and Error Correction Mechanism



Note: Misalignment is given by the gap between the RER and EREr. Higher level of the index indicates more depreciated level required by EREr compared to observed RER, indicating situation of RER overvaluation (misalignment).

Discussion

Finally, the paper evaluates the observed results in relation to the postulated theoretical relationships between real exchange rate and economic fundamental variables and postulated phase like behavior of RER in transition economies.

In terms of overall ability of fundamentals to explain real exchange rate behavior it is concluded that fundamentals had much more power in explaining real exchange rate behavior over the period of 2002Q2 to 2005Q4. Figure 1 indicates that there was appreciating move in RER in 2006Q1 which then marks the period of change in relationship between fundamental variables and RER and much smaller explanatory power of fundamentals in RER behavior, as indicated by adjusted-R² in Table 3 observed over these two sample periods. This evidence corroborates findings in the literature which claim the phase like behavior of RER in transition. Therefore, RER behavior first takes one pattern and then moves to another pattern, while these phases are due to the initial adjustments and transition that country has to go through until it reaches the pattern of RER behavior which is observed in developed matured market economies.

In terms of the postulated theoretical relationship between fundamentals and RER, the evidence indicates change in sign and significance of resource balance (RESGDP) variable, which is in the second period (from 2006 onwards) having a negative sign and indicates that improvement in resource balance is associated with RER appreciation. As explained before, relationship between resource balance variable (which implies the change in net foreign assets) can be changing due to the phases that the country goes through in the catch up process. Country may have a negative steady state net foreign assets position. In other words capital inflows appreciate the real exchange rate in this phase. However, once the desired long-term foreign liabilities position is attained, BH will have to start servicing its debt, so that for any additional increase in net foreign liabilities RER will have to depreciate. It is suspected that BH is currently accumulating net foreign liabilities and once the servicing of that debt start RER will have to depreciate. The findings suggest that this moment has not yet arrived so that we can expect much bigger shock to RER. Due to the current exchange rate regime of the currency board required RER depreciation can be achieved only through flexibility of prices in product and factor markets if it is not to endanger the sustainability of the currency board arrangement itself.

A significant and negative relationship between GOVCON and RER is observed, which indicates that increased government consumption is associated with RER appreciation. This sign is consistent with studies for other transition countries listed in Egert et.al. (2005:37) and in accordance to theoretically postulated relationship underpinning the single equation reduced form equation used to determine ERER.

This is due to the fact that GOVCON is expected to be increasing the price of non-traded goods sector, appreciating these prices in relationship to the price of traded goods prices, which causes RER to appreciate. As previously explained it is also expected that the size of non-traded prices (water, waste, energy, taxes) is large in transition economies. Also due to administered and regulated prices, which are composed mainly of services representing a large component of CPI in transition economies and the fact that these prices initially did not represent true costs which are necessary in the long run in order to include cost of capital or in order to comply with competition rules in *acquis communautaire*, these prices have kept rising and this process may not be over yet. This price increase, known as the Baumol-Bowen effect (Baumol, 1996), might not have yet fully completed in BH and the price increase could be dampened via privatization and market liberalization, which are still processes to be undertaken in energy, water, communal services etc.

The DEBT variable has not been statistically significant and there is change in relationship on DEBT variable in terms of direction of relationship with RER. In later period worsening in DEBT (which is measured as debt service to export ratio increasing) would be associated with more depreciated RER. This is expected since increase in debt servicing in relation to exports puts higher burden on the country in terms of servicing its debt and therefore is likely to lead to RER depreciation. In the future BH is likely to experience worsening of this ratio due to increased foreign debt which is likely to put depreciating pressure on RER in the future period.

Observed sign on variable OPEN is capturing a theoretically postulated relationship as increased openness is assumed to be associated with trade liberalization, which raises imports more than exports. This variable has same sign in both samples, however it is not statistically significant. Number of studies on CEE transition countries cited in Egert et.al. (2005:37) observe the same relationship.

The results are suggesting that cointegration methodology captures relationship between the fundamentals and RER which is specific to the situation of the post-war economy of BH characterized with high donations and transfers after the war, that have coincided with negative resource balance. Exchange rate regime of the currency board has at the same time ensured stability of the exchange rate and low inflation, but it has taken away from RER as an important transmission mechanism in the economy, leaving only flexibility of goods and services and labor markets to cure for macroeconomic internal and external disequilibria.

The results on relationship between RER and real economic variables in terms of the direction of relationship and significance of the fundamental variables in explaining RER behaviour indicate that the small open economy of BH has lost RER as a transmission variable in curing its external and internal disequilibria in its transition period towards a functioning free market economy. This result goes towards support of results obtained in Omerbegovic Arapovic (2011) which has indicated that choice of the exchange rate regime of currency board has been associated with much slower convergence of RER of BH towards the sample average, compared to Croatia and Macedonia, which have adopted more flexible exchange rate regime and, therefore, exhibited much faster convergence. From this we can deduce that their exchange rates were much more linked to the behavior of the fundamental economic variables compared to BH.

Results obtained in this study and Omerbegovic Arapovic (2011) suggest that in order to assess the readiness of each individual country in the region to join EU it is necessary to view the fundamental economic variables such as interest rates, inflation, government debt and deficits. The trends in fundamental economic variables of increased government debt and current account deficit create pressures which can not be captured with our equilibrium real exchange rate misalignment approach as we do not show significant misalignment at present period. The existing relationship between real exchange rate and economic fundamentals for BH suggest detachment of RER from the fundamental economic variables. The resource balance variable does not show the expected direction of influence with RER, which is likely to occur once debt servicing becomes priority. The overall explanatory power of fundamentals in the period from 2006 to 2012 is low, which goes in support of the studies that find relationship between economic fundamentals and RER behavior to weaken once the RER enters a stationary period (Egert, 2006). Further studies on RER in BH should test the power of monetary variables in explaining RER as they are postulated to have more influence on RER once country enters the stationary mode of RER behavior.

Conclusion

Recognizing the endogeneity of the equilibrium real exchange rate and adopting a mild and testable assumption that distance between the actual and the equilibrium real exchange rate is a stationary random variable justifies the use of the cointegration method for estimating the long-run relationship between the real exchange rate and its fundamentals. Since the methodology adopted assumes that the economy was in

internal and external equilibrium on average over the sample period, it implies that the average degree of misalignment in the sample will tend, by construction, to be small, if depending only on the time series estimates of sustainable value of fundamental variable of resource balance. Due to this fact counterfactual estimation of sustainable values of fundamental economic variables was used to determine sustainable ERER. The findings do not suggest RER overvaluation in middle 2012. However, the fact that BH in its post-war history has observed stable RER with continuous external disequilibrium could limit the ability of detecting ERER misalignment using time series estimates of fundamental variables alone.

The counterfactual estimation of change in sustainable value of net capital flows on ERER indicates that in BH, the real exchange rate was under-valued by less than 1 percent in April 2012 using the Two Step Engle Granger Methodology. In counterfactual estimation for BH, the smaller trade deficit associated with the smaller current account deficit produces an appreciation of the equilibrium rate and therefore tends to decrease the estimated degree of misalignment. This is evident in lower sustainable RER (ERER), or more appreciated value of sustainable RER compared to the fitted RER value calculated using the actual resource balance variable. This finding is due to observed negative relationship between resource balance variable and RER, which theoretical models associate with initial stages of capital account liberalization when price of non-tradable goods increases and causes RER to appreciate.

These findings go in support of an argument that structural adjustments which would bring flexibility to labor and markets for goods and services are required in order to bring about external balance as RER is not found as significant transmission mechanism in correcting external disequilibria in BH economy. Labor market reforms in direction of more flexibility and inaction of more flexible hiring and firing rules compared to the existing law, which was inherited from the socialist era and practically makes firing impossible for employers, should be priority for policy makers in order to move BH economy towards equilibrium.

The paper tested relationship between fundamentals and RER in BH over two different time periods and discovers that time period of consideration influences the direction of relationship between fundamentals and RER. Direction of relationship between resource balance and RER indicates that worsening of resource balance variable is associated with RER appreciation, opposite to postulated theoretical relationship and relationship between these two variables observed in shorter sample

which included data until 2005. Examination of current account, and associated capital inflows that support current account deficit, indicates that negative correlation between capital inflows and RER is present, leading us to conclude that capital inflows associated with worsening of the current account deficit put appreciating pressure on RER. In the absence of these capital inflows there would likely exist the depreciating pressures on RER.

This study also suggests that RER behavior exhibits phases in which RER initially exhibits much bigger connection to fundamental variables compared to the later period. This is in line with studies which suggest that RER could be first exhibiting trend appreciation after which it enters stationary periods. This needs to be further examined in future studies. Further research should also extend analysis and test whether other reasons exist for RER non-stationarity such as monetary phenomena and Balassa-Samuelson effect, which could not be fully assessed from the secondary data used in this analysis over the sample period.

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ⁱ Omerbegovic Arapovic A. (2009) *Real Exchange Rates in South East Asia: Misalignment and Currency Crisis*, VDM Verlag Dr. Muller, Saarbrucken., 57-79.

ⁱⁱ However, empirical considerations require compromise. First, it is not possible to construct a meaningful time series regarding productivity differential between traded and non-traded goods producing sectors because of data limitations. So the Balassa- Samuelson effect is ignored. Second data on government spending on tradables and non-tradables are not available as such. Government consumption mostly includes non-tradable items. Hence, the ratio of government consumption to total government spending is taken to capture the effects of government spending of tradables and nontradables following the methodology of AtiqurRahman and Abd. Basher (2002).

Unit prices of exports and imports were not available for BH so the external terms of trade could not be captured meaningfully, and we ignored this effect. It is also very difficult to have a correct and comprehensive measure of trade policy over a long time series. Hence, like other studies in the present field, the proxy for the trade policy is taken by a measure of openness following Edwards (1989), i.e., the ratio of export plus import to GDP. An increase in this ratio is supposed to be associated with trade liberalization. Thus the list of fundamentals affecting equilibrium real exchange rate includes ratio of government consumption to total government spending, resource balance, openness, and debt service to export ratio.

The proxies for the fundamentals were:

- Trade policy stance is captured by construct of openness measured as ratio of trade volume measure (imports plus exports) to GDP.
- Debt is the ratio of debt service to exports expressed as percentage.
- Government consumption is simply the ratio of government consumption expenditure to total government expenditure.

- And finally resource balance is given by the difference between exports of goods and nonfactor services and imports of goods and nonfactor services. These proxies are henceforward referred to as fundamentals.

ⁱⁱⁱKemme D.M., Roy S. (2002). *Exchange Rate Misalignment: Macroeconomic Fundamentals as an Indicator of Exchange Rate Crisis in Transition Economies*. Prepared for the European Association of Comparative Economics Meetings, Forli, Italy, June 6-8, 2002

^{iv}Engle, R. and C. Granger (1987). Cointegration and Error Correction: Representation, Estimation and Testing. *Econometrica*, 55. 251-76.

^vBaffes J., Elbadawi I.A., O'Connell S.A. (1999). Single-Equation Estimation of the Equilibrium Real Exchange Rate. In Hinkle L.E., Montiel P.J. (1999) *Exchange Rate Misalignment, Concepts and Measurement for Developing Countries*. A World Bank Research Publication. Oxford University Press. 405-465

^{vi}In view of the likely rise in debt of BH and macroeconomic sustainability, the paper considers direction of change necessary for the debt service to export ratio and the resource balance variable. This is done by excluding part of the "unsustainable" net capital inflows used to finance resource balance following the argument by Williamson and Mahar^{vi} (1998), so that paper differentiates between private direct investment, which tends to be long-term in nature, and liquid private portfolio investment, remittances and grants by excluding these later inflows to arrive at the "sustainable" resource balance. The other fundamental determinants of ERER should also be in their permanent state in equilibrium. Following the suggestion made by Klein^{vi} (1994) the paper assumes that sustainable debt service to export ratio is at most 20% but slowly increasing from levels observed in the sample (around 5% in 2001) in view of the higher repayment obligations due to increased external debt, and reduced grants and transfers.

^{vii}Baffes J., Elbadawi I.A., O'Connell S.A. (1999). Single-Equation Estimation of the Equilibrium Real Exchange Rate. In Hinkle L.E., Montiel P.J. (1999) *Exchange Rate Misalignment, Concepts and Measurement for Developing Countries*. A World Bank Research Publication. Oxford University Press. 405-465

^{viii} The equilibrium real exchange rate is then the predicted value from co-integrating equation ($e_t = bF_t$) based on a given vector of macroeconomic fundamentals, F_t^* , assumed to be sustainable long run equilibrium values, $e_t^* = bF_t^*$.

^{ix}Edwards S. (1989). *Real Exchange Rate, Devaluation, and Adjustment*. London: The MIT Press.

^xTwo RESGDP variables were tested. One was found using our estimate of quarterly GDP following moves in Index of Industrial Production and the other using GDP estimates from CBBH publication on estimates of quarterly GDP figures. No differences were found in observed relationship between RER and RESGDP and the paper continues using the estimated quarterly GDP figures.

^{xi}The Johansen (1988) cointegration imposes a restriction on the reduced form or VAR representation of the joint distribution of the real exchange rate and its fundamentals. (Baffes, Elbadawi and O'Connell^{xi}, 1999) We use a lag length of one for the underlying VAR system;

this is very restrictive even for annual data, but a longer length leaves us with very few degrees of freedom. The asymptotic tests indicate one co-integrating vector for B&H at the 1 % confidence interval.

^{xii}Baffes, Elbadawi and O'Connell (1999) note that estimates of b from the static regression are super-consistent, approaching the true parameters at a rate proportional to the sample size rather than the square root of the sample size; and they remain so even in the absence of weak exogeneity.

^{xiii}Note that the critical values for this test are more demanding than when testing for a unit root in a single variable since the OLS estimation tends to induce stationarity in the residual. (Gujarati, 1995)

^{xiv}Granger and Newbold, quoted by Gujarati (1995:724) have suggested: an $R^2 > d$ (Durbin Watson statistic) is a good rule of thumb to suspect that the estimated regression suffers from spurious regression.

^{xv}Gujarati, D.N. (1995). *Basic Econometrics*. Mc Grow Hill Singapore.

^{xvi}Baffes J., Elbadawi I.A., O'Connell S.A. (1999). Single-Equation Estimation of the Equilibrium Real Exchange Rate. In Hinkle L.E., Montiel P.J. (1999) *Exchange Rate Misalignment, Concepts and Measurement for Developing Countries*. A World Bank Research Publication. Oxford University Press. 405-465

^{xvii}AtiqurRahman A.K.M.A., Abdul Basher S. (2002). Real Exchange Rate Behavior And Exchange Rate Misalignments In Bangladesh: A Single Equation Approach. NorthSouthUniversity. Dhaka. Bangladesh.

^{xviii}Once the long run parameters b in Equation 1 relating RER and the fundamentals are estimated, the next step in the calculation of ERES is the estimation of sustainable fundamentals, F^* , so that ERES (e^*) is given by $e^*=bF^*$.

Possibilities of Development of Private Health Insurance in Bosnia and Herzegovina

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Abstract: Increased rise in costs of healthcare in the last five decades has rapidly increased interest in the functioning of healthcare systems within every country. The reasons for growth in healthcare costs are related to demographic changes, technology advancement, increased number of educated persons, emergence of new diseases, etc. Financing the risk of poor health is mainly organized through programs of social and private health insurance. Regarding the management of the risks of poor health in Bosnia and Herzegovina (BiH), the social health insurance system is the basic solution for the population. However, in BiH, as in other countries in the world, the system of social insurance has become unfeasible and it is necessary to search for new solutions, that is, to reform the system. The research subject in this paper is private/voluntary health insurance offered by insurance companies, which can be an efficient addition to social insurance in BiH. It has become present on the market of private insurance in BiH only recently, so its share in the total premium of private insurance is still minor. Therefore, a primary research was conducted on the possibilities for its development as well as on the need and acceptance by the users of healthcare services. Besides, there was a need for examining the performance of the existing system of social health insurance, based on the principles of Bismarck's model of financing, and recognizing its disadvantages. By identifying and eliminating obstacles for development of voluntary health insurance, it is possible to improve performance of the existing system of health insurance in BiH.

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Introduction

Health is the basic human right and one of the most important assumptions for economic development and life quality of a country's population. There is huge responsibility of individuals and communities regarding the prevention of disease occurrence and good health keeping and improving. Healthcare system is a complex entity whose functioning largely influences the level of population's health, which indirectly affects the economic system as well. Very often the level of country's development is represented as the level of health of an individual and the entire population. That is the reason why states are the bearers of the activities related to healthcare system management.

Every state has a specific healthcare system that can have some similarities when compared to other states. For many years, the awareness on the importance of health and health insurance has been growing stronger. Many make efforts to find the appropriate model that would satisfy the highest possible needs for healthcare services, along with low costs and higher quality of services. From the country's point of view, Bismarck's or Beveridge's model of healthcare system usually dominates, but there are other options that are combined or mutually corresponding.

Bosnia and Herzegovina (BiH) is characterized by the inherited Bismarck's model of social health insurance whose effectiveness has been long questioned, while the country's needs for healthcare increased significantly as the consequence of the war. Only in recent years, there has been more attention paid to the issues of the functioning of country's health system, quality of services provided and alternatives to social health insurance. Some reforms of primary healthcare have already been implemented (Atun *et al.* 2007), but the reform of current model of financing is necessary, and it should provide a framework for introducing other forms of health insurance, such as voluntary health insurance provided by private insurance companies. However, the present offer of voluntary health insurance is still at a very low level. The reason for this is the lack of legal regulations and low interest by the state for entering partnership in health insurance with insurance companies.

The aim of this paper is to establish the possibility for developing voluntary health insurance within the existing reform of the healthcare system in BiH. Due to that, based on the results of the secondary research, the most significant disadvantages were presented in terms of effectiveness of the existing system of social health

insurance. After that, based on the results of the primary research, the interest in the package of voluntary health insurance was registered by private healthcare institutions, citizens and insurance companies. The primary research was also to confirm the disadvantages of the existing system of social health insurance.

Healthcare System in BiH

Matter of health insurance needs to be observed in broad context of healthcare system, which is organized in a specific way in BiH. Healthcare in BiH is regulated on level of entities and Brčko District, and it results in a very complex organizational solution, especially considering that on level of BiH Federation, besides entity ministry, there are also ten cantonal ministries of health. It is clear that this significantly increases costs of transactions and makes coordination in decision making more difficult (Kozarević, 2010).

Healthcare in BiH is regulated with laws on healthcare adopted on level of entities. These laws have defined the concept of healthcare, which basically comes down to set of measures focused on systemic management of risks of poor health of the citizens. In purpose of that, competencies of specific institutions were established in this system, whose purpose is to enable high inclusion of population with right on healthcare, according to principles of: universality, cost-effectiveness, fairness, freedom of choice and autonomy.

Health insurance within the social insurance in BiH is regulated with provisions of laws on health insurance on level of entities as well as corresponding regulations on Brčko District and cantonal levels. A special place in healthcare system belongs to health insurance institutes (funds) and public health institutes which were established on level of entities as well as Brčko District and level of cantons. Cantonal health insurance funds are formed for activities performed on level of cantons in BiH Federation. BiH Federation health insurance fund collects the assets of federal solidarity which are used to form Solidarity Fund of BiH Federation. Its purpose is to equalize conditions of compulsory health insurance in all cantons, to organize certain programs of healthcare in interest of BiH Federation and to enable providing of priority and most complex forms of healthcare from certain special fields. The assets of federal solidarity are provided from contributions for compulsory health insurance. Crucial difference in Republic of Srpska is in higher level of centralization through unified health insurance fund.

Public health institutes also play significant role, and they are performing public-health activities focused on planning and implementation of measures for: supervision over infectious and noninfectious diseases, providing of health safety of food, water, air and products for general use, monitoring of the environment, promotion of health, prevention of diseases and implementation of regular health-statistical researches. Besides that, public health institutes are also in charge for providing of information on leading health issues and priorities, as well as for proposals for their solving.

Literature Review

The issues of health insurance have been everlastingly urgent and they provide material for constant research. By founding the World Health Organization (WHO) on April 07, 1948, the United Nations particularly emphasized their work in the field of healthcare. Under the auspices of the WHO, numerous conferences were held, whose aim was to define the suggestions for improving population's health. One of the most important conferences for creating healthcare systems of the modern times was the one held in Alma Ata in 1978. Then the declaration "Health for All by the Year 2000" was brought that established the policies related to health protection on the global level.

Public discussions led in many countries related to healthcare are mainly concentrated on the amount of health allocations or the issues related to increased costs and the need for the control of spending the resources in the healthcare system. Zrinščak (1999) compares the countries by various indicators such as: health allocations, healthcare system model, most frequent causes of death, etc. Although many healthcare indicators are getting improved, the inequality of the countries in terms of access to healthcare and social inclusion is increasing. Zrinščak mentions the following possible ways of cost control: (1) Measures related to patients – copayment, modalities of paying sick leave compensations and introducing waiting days, discounts in cases when insurance premiums during one year are not used, and limitations in selecting doctors and hospitals, (2) Health funds – reducing administrative costs, competition between private and mandatory funds, (3) Measures related to hospitals and doctors – encouraging competition among doctors and various models of payment for medical services, and (4) Measures aimed at control of pharmaceutical costs expressed through various models: "permitted" and "prohibited" drug lists, state regulation of prices, determination of the highest price, budget financing, etc.

In the last few years there has been a particular emphasis on the reform of the health insurance in the USA. Booz & Co (2012) established in its research that nowadays employers move towards the model of contributions deposited on savings accounts. Thus, employees may use the funds to choose the insurance package as they wish, instead of the earlier model of benefits in which company created the insurance program for all. Vaughan E. & T. (2000) believe that, regardless of the fact whether the financing system is private or public, it is influenced by adverse selection. They emphasize that private insurers' premiums grow due to increased costs of medical services caused by population aging, improved medical technology, capacity overload and preventive medicine. Additional criticism to the US healthcare system is related to unequal access to medical care, unequal quality of medical services, significant misuse, inefficiency and frauds (Wiening and Rejda, 2007). While describing the reform of the health protection initiated by President Obama, Schansberg (2011) emphasizes that the state's solutions to health protection are not efficient and that the advocates of healthcare free market should provide convincing evidence in favor of a real reform and conduct it where possible. He believes that abolishment or at least reduction of subsidies to health insurance based on employment would be the first step towards the free market of healthcare, and that employers would try to present several options to their employees. The effect of economies of scale is also possible if the groups of employers are categorized in only several insurance types.

According to the analysis made by Deloitte (2012), as a direct result of the Affordable Care Act (ACA) it was estimated that some 32 million Americans by the year 2014 will have been insured. As of 2014, most of these individuals are to possess a minimum level of health insurance, whether by state-sponsored plans, plans sponsored by employers or plans provided on the market of individual insurance policies. In order to improve the access and respect patient's rights, the ACA introduced new commercial standards such as: abolishment of medical underwriting, elimination of age limit, prohibition of exclusion based on previous illnesses, and cancellation of cost share (participation) for preventive services. Health plans would also have to provide the guarantee and renewing option as well as the coverage for essential medical privileges. The ACA introduces new distribution channels that would make the access to health insurance markets easier. National health insurance stock markets have been established aimed at providing information to potential clients and the facts on the range of health plans. Stock markets are designed for those who are not included in Medicaid, Medicare or employer sponsored plans.

The study conducted by the European Observatory on Health Systems and Policies (2006), which discussed the private health insurance in Great Britain, showed that the number of new users is static, if not decreasing, that the market numbers for these types of insurance for corporations falls, and that insurance companies are to turn to smaller firms and individual policies. Vidojević (2011) describes the health system of Great Britain and the National Health Service (NHS) that is the basis of the entire system. The result of the economic crisis in 2008 is the plan for introduction of radical reforms, probably the most drastic ones in the last four years. In July 2010, the White Book *Equity and excellence: Liberating the NHS* was presented, which defines a new way of the NHS functioning. Patients will actively participate in making important decisions related to their health, in all stages of treatment. The feasibility of this change shall involve larger accessibility of medical documentation and the possibility for a patient to have an insight into it at any moment and, if he wants, to share it to a third party. Provided that all the planned measures are taken, in the following 4 years the savings should be achieved amounting to almost £20 billion that could be invested into the improvement of health service quality.

In terms of financing healthcare in the European Union (EU) member states, Totić (2012) emphasizes that the national bodies of every EU member states join the collected contributions into the health funds for that purpose. Such fact leads to reluctance of certain groups to collective payment of subsidized costs of healthcare for other people, especially in poorer EU member states. This consequently increases reluctance to regular payment of taxes and/or contributions. Private health insurance is suggested as an alternative. Janković (2011) states that private (voluntary) health insurance is usually specified for the part of the population exempt from mandatory health insurance based on their high income (the Netherlands), the part of the population that may, based on their high income, choose whether to stay in mandatory or opt for voluntary health insurance (Germany) or for the part of the population, the so called self-employed (Austria and Belgium). The level of coverage is in the range of 0.2% in Austria up to 24.7% in the Netherlands.

The search for a satisfactory system of financing healthcare is also present in Russia. Šolak (2007) believes that Russia needs a complete reorganization of the system of mandatory social health insurance. Fifteen-year long reforms did not lead to the goals that were set. One can notice the disruption of the proclaimed principles of social justice regarding the access of medical assistance, while the level of quality and culture in terms of health service is not appropriate to the modern needs.

Being a country in transition, on its way to healthcare reform, BiH suffers numerous problems due to its constitutional arrangement (two entities – BiH Federation which consists of cantons and Republic of Srpska – and Brčko District) and the fact that healthcare is regulated at the entity levels (Cain et al., 2002). The system in BiH Federation was decentralized too early, since every canton is responsible for its administration and the financing of healthcare. The system in Republic of Srpska (RS) is centralized and it has one body – the Ministry of Health that monitors the healthcare system. Due to the lack of appropriate legal mechanisms, coordination between the entities is rather poor, while in BiH Federation the cantons do not mutually cooperate at an appropriate level. Untimely decentralization brought a dramatic change of the system from the aspect of administrative structure and management, while the institutions continued their work without changes and kept the same functions as before the 1992-1995 war. The reason is that they were not able to develop the necessary skills and capacities that would stand such strong and complex processes of decentralization. That is why many functions in the cantons and entities are duplicated. The detected problems are also related to almost complete lack of planning function in healthcare, implementation of the passed laws, as well as a complex organizational structure. The implementation of health reform starts with a paradox including an innovative approach against the political resistance to changes as well as enthusiasm against obstacles. BiH cannot respond to all demands for healthcare and the situation is substantially worse than in 1992. A significant number of life-important medical treatments does not exist. There is a certain interest in the system reform, but nothing would move forward until the entities start cooperating and creating unified strategies for the entire country (CARDS Program 2005).

For the purpose of health statistic records, the Public Health Institute of BiH Federation (2012) specified a set of conclusions on the total health condition of the population. The healthcare reform in BiH Federation is oriented to strengthening primary health protections, with the emphasis on promotion of health and prevention of illnesses. However, there are still discrepancies present in the population's access to the teams of primary health protection in the cantons of BiH Federation. In accordance to the adopted Strategy for development of primary health protection, the process of implementation of family medicine in BiH Federation continued gradually. Even though there is a significant number of educated doctors and nurses and improved infrastructure, implementation of family medicine is still not satisfactory. A particularly evident problem is constant turnover of already

insufficient staff, medical doctors in particular. Implementation is more difficult mostly due to a slow restructure of departments within outpatient clinics, in accordance to the Strategy for development of primary health protection, non-stimulating mechanisms of payment, lack of managerial skills and insufficiently coordinated legislative.

Methodology

The existing systems of health insurance, not only in BiH but also in other countries in the region and world, show numerous disadvantages. The legal framework in BiH defined voluntary private health insurance as the option that citizens can use by their own choice.

The assessment of performances of the existing model of health insurance in BiH is based on the secondary source indicators, announced by Eurostat (2012), the World Bank (2012), Central Bank of BiH (2012), Federal Ministry of Health (2013), Public Health Institute of BiH Federation (2012), Public Health Institute of RS (2011) and Agency for Statistics BiH (2012). Special attention was given to the following indicators: level of health protection costs, in particular expenditure on drugs from personal resources of the population; state's allocations for healthcare; rates of natural population growth; leading causes of death; organizational structure of the health system; social and economic environment; availability and structure of healthcare personnel; characteristics of primary protection; amount of contribution for health insurance; populations' coverage by health insurance; population's structure by work status; development of the private sector of health protection and legal regulations, as well as population's familiarity with these regulations.

In order to reach research purposes, the development of voluntary health insurance in BiH is defined as the independent variable, while the improving the effectiveness and efficiency of the existing health insurance system in BiH is the dependent variable. The starting premise in the paper is that by identifying and removing obstacles for development of voluntary health insurance, it is possible to improve effectiveness of the existing system of health insurance in BiH. Therefore, the paper attempts to confirm that there is room for its development through the reform of healthcare system, extension of the existing model of social insurance and also that there is interest by insurance companies in a more serious approach to the offer of health insurance package. For the purpose of confirming the formulated hypothesis, the empirical research was conducted by survey of three groups of subjects: private

healthcare institutions, citizens, that is, the users of healthcare services, and insurance companies.

The questionnaire for private health institutions consisted of 12 questions, in which the respondent had offered answers. In some questions there was option of entering a new, own response that was not listed in the questionnaire. Private health institutions located in Tuzla Canton are listed on the web site www.bhzdravlje.ba, where they are classified according to the activity and the level of care they provide to their customers. Of the total number of these institutions, the survey answered 51 institutions located in Lukavac, Gračanica, Gradačac, Srebrenik, Tuzla and Živinice.

The second survey was focused on citizens and the questionnaire similarly consisted of 12 questions with multiple choice answers. A total number of 183 healthcare service users filled the questionnaire. One part of the survey was conducted online by the Internet news portal - www.lukavac-x.ba (115 respondents from different age groups).

The last e-mail survey was focused to private insurance companies. The questionnaire, consisted of 10 questions with multiple choice answers, was send by e-mail to all insurance companies registered in BiH. Since two insurance companies have branches in both entities, total number of active insurance companies in BiH is 22, and eight of them responded to the e-mail survey.

Results and Discussions

Disadvantages of the Existing System of Social Health Insurance in BiH

Based on the analysis of secondary source indicators, a general rate is that the existing system of health insurance in BiH has many disadvantages. There are many fields in the healthcare sector that require changes and improvements. The following part of the paper mentions the most significant results obtained on the basis of the secondary source analysis.

The rates of social insurance contributions are too high, even when compared to the OECD and new EU member states. The rate of social contributions in BiH Federation is 41.5% on gross salary, while in RS that amount is 33%. Over 50% of those covered by health insurance (retired persons, unemployed, invalids, war veterans) are exempt from paying contributions and their health insurance is

financed by the transfers from other non-budgetary funds and public revenue. Besides, the insured/retired number ratio grows in favor of the retired persons and is around 1.1:1, which is definitely not a desirable trend. It is well known that this ratio needs to be 4:1 in order for the social insurance system to function properly.

The total healthcare expenditures in BiH are around 10.3% of the GDP, which is a level much higher than in most EU countries. Almost 60% of the total healthcare expenditures are paid from public resources while more than 40% are financed by households from their own resources.

Unfavorable trends in the economy, war events, economic blockade, huge growth of unemployment, increased influence of grey economy, increased costs of healthcare, change in the structure of insured categories, etc., affected the increase in personal participation of citizens in the provision of health protection, economic situation in healthcare, and financial business activities of health insurance funds.

Natural rates of population growth change more rapidly in comparison to the EU countries. Also, due to higher mortality rates compared to birth rates, natural population growth (-0.8%) has a negative value and it leads to natural depopulation.

Regular healthcare statistics data show that chronic diseases are dominant in BiH when it comes to the leading causes of population diseases and mortality. Due to diagnostics costs, therapy, and rehabilitation of patients, such diseases are the leading health problems every year and they are a significant burden for the limited budget of the health sector and the entire community. Also, the results of the population surveys confirm unfavorable trends of life style and habits of the population with addiction diseases being dominant (smoking, alcoholism, drugs and psychotropic substances), inappropriate diet, overweight and obesity, as well as the lack of physical activity, which are the key risk factors for the health of BiH population.

Organizational structure of the healthcare system is rather complex with the fragmentation of the system present, particularly in BiH Federation, where the cantons have the authority over healthcare services. Therefore, the healthcare system in BiH Federation includes: Federal Ministry of Health, ten cantonal ministries of health, Federal Institute of Health Insurance and Reinsurance, ten cantonal institutes of health insurance and eleven public health institutes. The healthcare system in RS is centralized at the entity level.

A large part of BiH population is not covered by health insurance and does not have the right to healthcare. The largest number of the uninsured persons in RS includes the employees of the companies in which employers do not pay health insurance contributions. There is an additional problem in BiH Federation for the unemployed who miss the 30-90 day deadline for registration at the employment bureau and then lose all rights to health insurance through this bureau.

The public is not familiar enough with the process of passing and changing laws. The media do not sufficiently follow and inform on the laws in the field of healthcare that are in the process of passing and enacting in parliaments. Furthermore, authorities do not invest any efforts to make these new laws closer to citizens and introduce them to their rights.

Empirical Research into the Possibilities for Private Health Insurance Development

Research into Private Healthcare Institutions

Based on the answers received from private healthcare institutions, it was established that female persons have a bigger share in their user list (63%). From the aspect of patients' age structure, the highest number was in the range 19-55 years (41%), then 56-75 (32%), while the proportion of the patients aged 0-18 (15%) and 76-100 (12%) was relatively small. Almost all their patients have social health insurance (96%).

The officials of the private healthcare institutions presented the reasons why patients choose to use the services in the private sector. They are given in Table 1. The most important reasons for using their services are high quality and fast service. Most private healthcare institutions (71%) believe that their services are of higher quality than those provided by the public healthcare institutions.

Only 41% of the private healthcare institutions have contracts for certain services with the institutes for social health insurance. On the other hand, they are highly interested (75%) in contracting the services with these institutes. Table 1 shows that the satisfaction degree of those institutions that have the contracted services with the institutes is at a very low level (only 6% of them are completely satisfied).

Only 43% of the private healthcare institutions support the policy of a complete or partial opening the space in the healthcare system of BiH. The reason for this is that 27% of the institutions believe that their current position compared to the public healthcare institutions is poor. Private healthcare institutions offer certain suggestions for patient's better access to healthcare services, not only in private but also in the public healthcare sector as follows:

- Increasing the involvement of private institutions in healthcare (57%).
- Increasing the flexibility of contracts in terms of prices and other conditions (35%).
- Strengthening the monitoring of the contracted services and public announcement of data in terms waiting, quality, satisfaction, accessibility, etc. (47%).
- Improving the regulation in both sectors (37%).
- Other (12%): controlling public procurements in the public sector, defining patients' rights and obligations of medical service provider by introducing clinical guides into the law on health protection, providing a patient with the option to choose where to use healthcare services and equaling private and state healthcare.

Private healthcare institutions are highly interested in cooperating with private insurance companies (59%), but only a small number of them have already concluded the contracts with insurance companies (14%). Only 9% of the institutions replied that they did not see their interest in such type of business arrangement. The institutions that stated they do not have an opinion on the subject (20%) believe that they lack sufficient information on advantages and disadvantages of such arrangement.

Table 1: Surveys' Results

Survey of private healthcare institutions		
Reasons why patients choose private healthcare institutions:		
Service speed	68,63%	
Service quality	84,31%	
Impossibility of services in the public sector	45,10%	
Higher patients' confidence	49,02%	
Other	11,76%	
Satisfaction by the conditions of contracted cooperation with the health insurance institutes:		
Completely	5,88%	
Partially	17,65%	
No, due to prices	13,73%	
No, due to payment overdue	11,76%	
No, for some other reasons	9,80%	
Survey of users of healthcare services		
Reasons for using the healthcare services provided by the private sector:		
Impossibility for getting the appropriate service in the public sector	43,17%	
Impossibility for getting fast service in the public sector	50,82%	
Lack of confidence in the services provided in the public sector	21,86%	
None of the mentioned	10,38%	
Other	8,20%	
Citizens' experience while using the services of public and private healthcare institutions:		
	Public	Private
Rude staff	27,33%	3,76%
Long waiting for some services (tests, referral letters to specialists, medications, etc.)	38,26%	10,22%
Unprofessional healthcare staff	18,33%	5,91%
Low quality treatment	12,86%	4,84%
Other	3,22%	75,27%

Source: Authors' research

Research into the Users of Healthcare Services

Most research subjects in the group of the users of healthcare services were male persons (67%). The largest number of them belongs to the age group in the interval 19-55 (87%), with significantly smaller proportions of other age groups 56-75, 0-18, and 76-100, in percentage 8%, 3% and 2%, respectively. Out of 92% of the subjects, who had social health insurance, 78% of them were not satisfied by the existing social health insurance. Only 20% of the subjects stated that they do not frequently use the services provided by the private healthcare sector. The reasons are given in Table 1, and it is evident that their reasons are rather similar to those stated by private healthcare institutions meaning speed of services, lack of certain service in the public sector, and higher confidence in the private sector.

Regarding the quality of private versus public healthcare institutions, 73% of the subjects believe that the services in the private sector are of higher quality. The reasons for dissatisfaction by the existing social health insurance are given in Table 1, parallel with the rate given for the services provided by the private sector. It is evident that the subjects who had already used the services provided by the private sector rated their quality as much higher than in the public institutions. Similarly, Table 1 showed that the private healthcare institutions recognized long waiting for some services, unkind and unprofessional staff and low-quality treatment as the same reasons why patients/clients opt for the private sector services.

More than 93% of the subjects believe that their social health insurance should provide them with a broader coverage of healthcare services. Only half of the subjects are familiar with the possibility for health insurance via insurance companies, while 86% of them would opt for private health insurance provided that their price is affordable.

Research into Insurance Companies

Underdevelopment of the private insurance market in BiH is evident from the realized structure of the premium on the market. The largest share belongs to the compulsory motor third party liability insurance. In the entire premium structure, the share of health insurance is 1.59% (BiH Federation 1.87% and RS 0.78%), and this is mainly for traveler's health insurance. The market itself is highly fragmented, with a significantly higher number of insurers than needed for such a small market. As many as 14 insurers have the market share below 3%. Domestically owned

insurers cover less than half of the market. There are 10 active insurers on the market that are under majority foreign ownership, but they cover almost the entire life insurance market. The owners of these insurers are in Austria, Croatia, Serbia, and Slovenia. One company for reinsurance is also present on the market.

Although all the insurance companies surveyed plan to introduce voluntary health insurance, only two of them currently offer these products. The insurance companies that provide the package of voluntary health insurance offer various products including those that cover the basic package of healthcare services to those that cover a wide spectrum of services. Female persons make 55% of the insured structure while the dominant age group is 19-55 (70%). Cooperation with the private healthcare institutions is registered for only one third of the products and 50% of the subjects believe that the private healthcare institutions are cautious because they are not well informed about the voluntary health insurance. Thirty-three percent of the subjects think that these institutions are interested in cooperation while the remaining 17% believe that the healthcare institutions are not interested as they do not see any benefit from such cooperation.

Half of the subjects think that the insurance market is ready for the offer of voluntary health insurance package, while the other half estimate that the market is still not mature enough for such offer. Most of the insurers (83%) think that the reform of the healthcare system should envisage the room for voluntary health insurance provided by private insurance companies.

Conclusion

The research described in this paper shows the current situation in the healthcare system of BiH. A large number of indicators point at the system crisis, inefficiency, dissipation of scarce resources, large dissatisfaction of all participants, and other disadvantages. Regarding the private voluntary health insurance as the addition to the existing system of social health insurance, it is not developed due to many obstacles that need to be passed. On the other hand, interest in the introduction of such type of insurance, as showed by the results of the primary research, is high in the private healthcare institutions, users of healthcare services, and insurance companies.

Development of voluntary health insurance is necessary and perhaps the only way out of the current situation. Unsustainability of Bismarck's model of healthcare

system, not only in BiH but globally as well, is obvious, and there are numerous arguments that prove this statement. That is the reason why for a long time alternatives have been sought as well as additions to the traditional models of healthcare systems. The main causes of unfavorable relationship between the payer of health contributions and the users of health protection are demographic changes, that is, an immense increase in the participation of the old population (retired persons) and high unemployment rate. Consequently, this reflects in the decrease in the number of those who pay contributions and the increased number of health protection users.

Unfortunately, there is no universal solution or an optimum model of healthcare system that would be widely acceptable. However, depending on the country itself and its characteristics, it is possible to create a combination of one of the models with the additional insurance options such as voluntary health insurance provided by private insurance companies. In this respect, the development of voluntary health insurance in BiH should be observed as an important breakthrough towards the improvement of health protection.

The disadvantage of the voluntary health insurance lies in the fact that it does not have social solidarity. This means that those with higher risks of diseases pay higher insurance premiums (sick, old, smokers, etc.). A good thing for these categories of citizens is the fact that they would still have their social insurance. In other words, relieving the burden of the healthcare system by means of voluntary health insurance would leave more room for more endangered categories of the population.

Finally, it has been confirmed that in the forthcoming reform of the healthcare system, which is obviously necessary, one should search for the room to develop voluntary healthcare insurance provided by private insurance companies. By removing the obstacles for development of this type of products of private insurance, it is possible to make significant improvement of the existing system of health protection in BiH.

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An Overview of Small and Medium-Sized Banking Development in Bosnia and Herzegovina

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Abstract: *The purpose of this paper is to investigate the level of SME banking development in Bosnia and Herzegovina (BH). By using a structured questionnaire, the authors discuss perceptions of the banking sector representatives in BH regarding SME banking and their future plans for the management of credit risk associated with financing the SME sector. One of the main findings of this research is that the SME sector is becoming a strategic sector for BH banks and banks are willing to increase their involvement with SME clients. Authors also present results on current level of banks' exposure to SMEs, types of financial services offered to SME clients by BH banks, drivers of banks' involvement with SMEs, obstacles to further development of banks' involvement with SMEs. Based on the banks' responses and results of research conducted, suggestions to policy makers are given, such as tax reforms, interest rate subventions to SMEs, improvement of judiciary, simplifying administrative procedures. Also, some recommendations are given to banks, such as the need for better understanding the requirements of SME clients providing them more personal approach and creating a partnership, as well as lobbying the government bodies to change regulations governing SME sector.*

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Introduction

Since SMEs are the primary moving mechanism of new job creation and increase of gross domestic product, their growth and development are the priority amongst the goals of national economies for developed countries of the world as well as for countries in transition. On the other hand, financial system plays an important role in achieving these goals with the main purpose of preserving the stability of national economy. For the last few years, the main focus of the financial system (mostly, banking sector) towards the real sector has been expanding. From the position of being observed by the financial institutions as too complex for risk management, the SME sector became the strategic goal for the institutions around the world.

Furthermore, in the aftermath of the global financial crisis, SMEs are facing many challenges and limitations in their business operations. Reduced accesses to market, reduced managers' ability to managing resources as well as limited access to capital are marked as the most important challenges for SMEs to overcome. Growth of SME banking, in terms of crediting and providing a wide range of banking services to SMEs, is the result of the fact that banks, besides understanding the needs of SMEs, are managing to find the answers to challenges of high credit risk. Due to the information technology development, the banking sector is increasing its support for development and growth of SMEs through the increase of financial support and also through the consulting services as a response to the challenges faced by this sector.

The aim of this paper is to point out the importance of SME banking, as a contributor to bank profitability, in developed part of the world as well as in developing countries. Moreover, the objective is to investigate the level of SME banking development in BH. The BH banking system is consisted of Central bank, two banking agencies and 27 banks. Central Bank of BH maintains monetary stability by issuing domestic currency, convertible mark, according to the currency board arrangement. Banking agencies, as authorities for bank supervision and licensing, are established on entity level as Banking Agency of the Federation of BH and Banking Agency of Republic of Srpska. According to latest data available, total assets of 27 BH banks at the end of June 2014 were BAM 23,607.4 million.

This paper is divided into three parts. The first part of the paper discusses the phenomena of SME segment "bancarization", focusing on the motives for a greater involvement of banks in financing SMEs in the developed part of the world. In the second part of the paper a brief review of recent literature on SME banking is given.

In the third part of the paper the results of the empirical study on SME banking development in BH are presented. By using a structured questionnaire, a discussion is given of the perceptions of the banking sector in BH towards its orientation to the SME sector and future plans for their support as well as for the management of credit risk associated with financing the SME sector.

The Theoretical Framework of the Phenomena of SME Segment “Bancarization”

The phenomena of SME segment “bancarization” is a syntagm used by de la Torre et al. (2009) to describe increased involvement of banks in financing SMEs as a strategic sector that in the last decade increased banks’ returns all over the world.

Growing interest of banks in the SME sector lies in the fact that entrepreneurs and SMEs represent the most efficient segment of the economy in most of the countries in the world. These enterprises have the highest contribution to the increase in employment, gross domestic product (GDP), and trade, which makes them the basis of national economies growth and development. Their role is especially important in transitional and developing countries facing problems of high unemployment, low degree of economic activity, inadequate competitiveness, and lack of investment. As a stable source of new job creation, SMEs have an important social function to absorb labor surplus in transition processes.

Importance of SMEs in the world economy was also observed by financial institutions. In that respect, many of the banking institutions recognized the SME sector as a strategic sector for increasing banks’ profit margins (Beck et al., 2009; de la Torre et al., 2009). According to the European Commission’s (EC) *SMEs’ Access to Finance survey* for 2013, the most common provider of loans to EU SMEs were banks, providing the loan to 85 per cent of all SMEs that borrowed in the last two years, where the most common amount (36 per cent of all loans) was €100,000 to €1 million, but just over half (52 per cent) borrowed less than €100,000 (EC, 2013). In addition, de la Torre et al. (2010) find that, in order to serve SMEs, banks are developing new business models, technologies, and risk management systems to provide a holistic approach to SMEs through a wide range of products and services, with fee-based products rising in importance.

SME banking per se is an “industry in transition”. From a market that was considered too difficult to serve, it has now become a strategic target of banks

worldwide. SME banking appears to be growing fastest in emerging markets (low- and middle-income countries) where this gap has been the widest. More and more emerging market banks are developing strategies and creating SME units.

In the International Finance Corporation's SME Banking Knowledge Guide it is indicated that importance of SME sector has been recognized by the governments around the world. In that respect, governments are more involved in creating positive environment for development of SME banking by addressing issues of legal and regulatory barriers, creating credit infrastructure, etc. Furthermore, in the same guide it is indicated that banks better understanding of SMEs needs and tailored approach to overcoming credit risk associated with SMEs can be observed as the most important factor of SME banking growth. New approach in creating tailored financial products/services for SMEs is shown to be beneficial for banks in terms of increase in their returns on assets from operations with SMEs

Literature Review on SME Banking Development

Development of commercial banking is related to the need of corporations for debt financing (loans) mostly in the USA. But during the 1990s, major regulatory changes impacted lending patterns of the US banks, changing the focus of the US banks from lending to large corporations to small businesses, which was the turning point for SME banking in the USA and, at the same time, for the rest of the world.

Analyzing transformation of the US banking industry in the light of many major regulatory changes that occurred in the period from 1974 to 1994, Berger et al. (1995) found that the major change in lending patterns of the US banks was related to a significant decline in lending to large business borrowers due to the increase of different (cheaper) types of financing in the growing the US debt market. Furthermore, Berger and Udell (1995) as well as Strahan and Weston (1998) observed that due to the bank consolidation under the Riegle-Neal Act of 1994, large banks decreased their involvement with SMEs, while an important role remained for community based banks in extending loans to small businesses. Later on, Berger and Udell (2002) and Vera and Onji (2010) found that bank consolidation in the USA did not affect small-business lending. Moreover, they found that large banks seem to be more actively involved in lending to small businesses. According to the survey of the US Small Business Administration (SBA, 2013), the value of small business loans outstanding to the value of total business loans outstanding for depository lenders in 2012 was 67.32 per cent.

Early research of the European banking system was conducted by Vitols (1998), who focused on German banks. This research showed that SMEs within German manufacturing sector, which accounted for almost 60 per cent of manufacturing employment, had the highest demand for long term debt capital. Analyzing debt account of SMEs and large companies, Vitols found that long-term bank debt accounted for 18.5 per cent of the balance sheet liabilities of small companies as opposed to 4 per cent for large companies, showing a strong market for SME loans.

In the early 2000s several researches discussed the demand side of SME lending (Schiffer and Weder, 2001; IADB, 2004; Beck, Demirgüç-Kunt and Maksimovic, 2005; Beck, Demirgüç-Kunt, Laeven and Maksimovic, 2006), while no comprehensive research existed on the supply side of bank financing to SMEs across countries.

The first worldwide comprehensive study on SME banking was conducted by Beck, Demirgüç-Kunt and MartínezPería (2008). The intention of this survey was to investigate bank financing to SMEs around the world, focusing on three main areas: banks' perception of the SME segment, drivers and obstacles to SME financing, and banks' perception of the role of government programs to support SME finance and of banking prudential regulations. Beck et al. (2008) found significant differences in exposure, lending practices, business models, as well as drivers and obstacles of SME finance for banks operating in developed *vis-à-vis* developing countries. The differences between developed and developing countries are likely to reflect deficiencies in the contractual and informational frameworks in developing countries and less stable macroeconomic environment.

Motivated by the previously mentioned survey, de La Torre et al. (2009, 2010) conducted a similar research amongst Argentinean and Chilean banks, analyzing drivers and obstacles to banking SMEs. In developing banking sectors of Argentina and Chile, banks began targeting SMEs due to the significant competition in the corporate and retail sectors. This research showed that banks limited the range of products they offer to SMEs to cope with macroeconomic and contractual risk, which is observed in emerging economies. De la Torre et al. also learnt that banks discovered a key, untapped segment and were making substantial investments to develop the relation with SMEs and compete for them. Additionally, the research showed that banks were developing the internal structures and mechanisms to work with SMEs, adapting their business and risk models to reduce the costs and risks of

the segment. As a part of this process, banks still need to obtain better measures of their exposure to the segment, in terms of income, costs or risk.

Several studies on SME banking development, focusing on transition economies in Europe, showed that, in case of Poland, there are noticeable patterns of change in how the banks regard the SME sector through changes in policies and strategies of commercial banks for increased interaction with medium-sized firms. This clearly indicates that there are specific responses in the commercial banking sector to the specific circumstances of transition (Feakins, 2004). On the other hand, in case of Croatia, commercial banks lack consistency in the loan approval criteria; hence, the low loan approval rate was likely a consequence of credit rationing due to lack of loan assessment skills amongst loan officers and might be a sign of high risk aversion or lack of relevant business and market research data needed for evaluation of the SME business projects (Czirák et al., 2005).

The SME Banking in Bosnia and Herzegovina: Current Position and Development Perspectives

The Methodology and Research Data

In order to assess the current position and development perspectives on BH banking sector involvement with SMEs, a questionnaire consisting of 16 questions was created. The questionnaire was designed to address three broad areas. The first area refers to measuring the extent of banks' involvement with SMEs; the second area refers to analyzing the determinants and driving forces of the degree of banks' financing to SMEs, such as demand factors, competition, corporate strategy, and macroeconomic, regulatory, and institutional factors; and the last one refers to investigating obstacles to banks' future involvement with the SMEs sector, focusing on understanding the government role in enhancing overall economic environment to strengthen the relation between the banking and SME sectors.

The questionnaire was sent to 23 banks in BH. The data presented in this paper were calculated based on the sample of 10 banks (i.e. 37 per cent of all BH banks), which returned the filled questionnaire. Each of them has SMEs amongst their clients.

To classify SMEs, all surveyed banks use average annual sales. However, a variety of ranges is noticeable, indicating that there is not a unified criterion to define the segment as a whole. For 40 per cent of the banks, a company is considered to be a

small enterprise (SE) when its average annual sales are below BAM 2 million. Average annual sales of BAM 3 million or less classify a company as an SE in 20 per cent of the banks. For 10 per cent of the banks this limit is BAM 5 million, while the same percentage of banks consider a company with average annual sales of under BAM 300,000 as an SE. One fifth of the banks do not classify SE and medium enterprise (ME) as different segments at all, defining them as a unique SME segment of clients, with the average annual sales limits of BAM 3 million and BAM 5 million. The lower limit of average annual sales for ME ranges from BAM 300,000 to BAM 5 million, while the upper limit ranges from BAM 3 million to BAM 100 million.

Besides average annual sales, 30 per cent of the banks have other criteria to define the SME segment, such as branch, market position, and total credit exposure under BAM 500,000.

The Current Position of the BH Banks Involvement with the SME Sector

All the surveyed banks have SMEs amongst their clients, as well as entrepreneurs who are defined as enterprises or crafts, which do not operate for more than 3.5 years. The banks have different levels of exposure to the SME segment in terms of loans (Table 1). The ratio of SME loans to total loans varies from 5 per cent to 70 per cent, with the average of 23.3 per cent, while the ratio of SME loans to total corporate loans is higher: from 7 per cent to 85 per cent, with the average of 38 per cent.

Table 1: Banks' Exposure to the SME Segment in Terms of Loans

Ratio of SME loans to total loans	5,0 %	9,0 %	12,0 %	17,0 %	18,0 %	25,5 %	30,0 %	70,0 %
Ratio of SME loans to total corporate loans	7,0 %	20,0 %	20,0 %	31,0 %	40,0 %	50,0 %	50,7 %	85,0 %

Source: Authors research

When it comes to banks' exposure to entrepreneurs, 40 per cent of the banks did not have the data on such exposure. For the rest of them, the ratio of entrepreneurs loans to total loans varies from 0.5 to 15 per cent, with the average of 5.7 per cent, while the ratio of entrepreneurs loans to total corporate loans ranges from 0.9 to 13.58 per cent with the average of 8.1 per cent.

Banks' involvement with the SME sector is also analyzed through deposits (Table 2). The range of SME deposits to total deposits ratio is 2 to 55 per cent, and its average is 16.1 per cent. Besides that, SME deposits to total corporate deposits ratio varies from 4 to 50 per cent, with the average of 24.2 per cent.

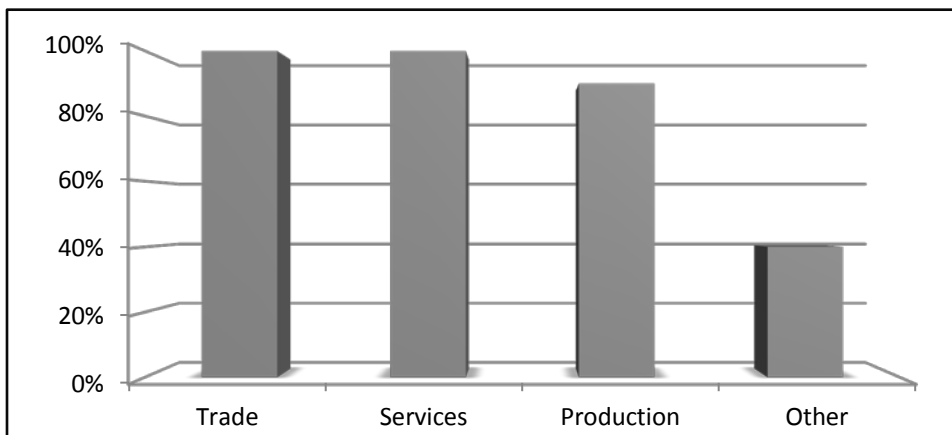
Table 2: Banks' Involvement with the SME Segment in Terms of Deposits

Ratio of SME deposits to total deposits	2,00 %	5,50 %	6,09 %	10,00 %	18,00 %	55,00 %
Ratio of SME deposits to total corporate deposits	4,00 %	12,47 %	14,00 %	20,00 %	45,00 %	50,00 %

Source: Authors research

Most of the SME clients come from the trade and services branches (Figure 1). Production is in the second place, with 90 per cent of the banks having SME clients from this branch. Also, 40 per cent of the banks pointed out that they have SME clients from other branches such as associations, information technologies, construction, agriculture, transport, real estate, mining, energy, and recycling.

Figure 1: Branches of Banks' SME Clients



Source: Authors research

In respect to maturity of loans offered to SME clients by the surveyed banks, most of the banks (60 per cent) categorize loans as short term, medium term, and long term, while the remaining 40 per cent of the banks do not make differences between medium term and long term, classifying all loans with over one year maturity as long term loans. The types of loans are presented in Table 3.

Table 3: Types of Loans to SME Clients

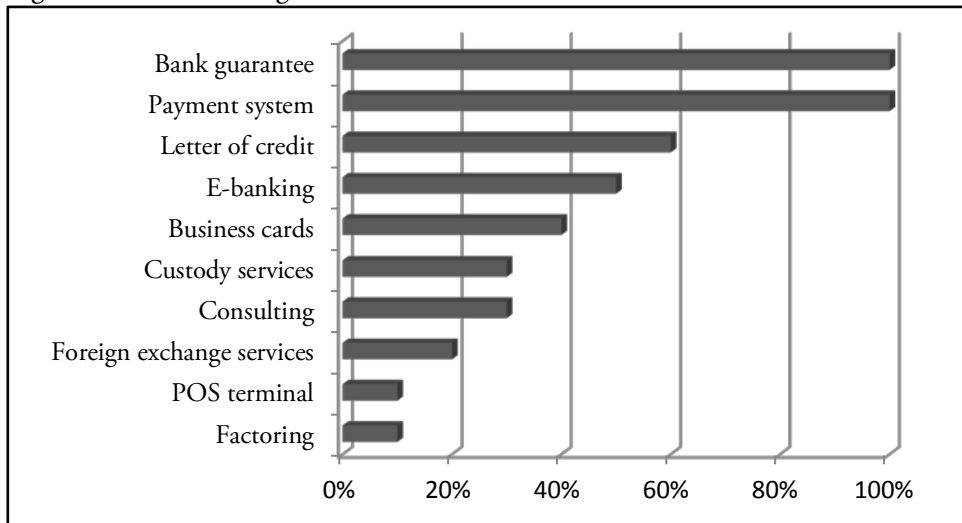
Loan maturity	Loan type
Short term	overdraft, amortizing loan, revolving loan, bullet loan, credit
Medium term	working capital loan, permanent working capital loan
Long term	investment loan, working capital loan, permanent working capital loan, fixed asset loan, consolidation loan, lombard loan, amortizing loan

Source: Authors research

Most of the surveyed banks (80 per cent) could not give a precise answer to the question about the average amount of loan given to SMEs, but they gave the information on ranges of SME loan amounts. The minimum amount of loan given to SMEs is BAM 1,000, while maximum is BAM 5 million. It is obvious that there is not a unified approach to SME lending and that banks have individual approaches to each SME, depending on client's needs, branch, creditworthiness, collateral, *etc.*

Regarding the products which banks use to engage with SMEs, besides primary deposit-credit activities, bank guarantees and payment system are mostly used by all the banks (Figure 2). Letter of credit is the next most used service (60 per cent of banks), followed by e-banking (50 per cent), and business cards (40 per cent of the banks). Custody and consulting services are offered to SMEs by 30 per cent of the surveyed banks, while the least used services for SMEs are foreign exchange services, POS terminals, and factoring.

Figure 2: Other Banking Products/Services for SME Clients

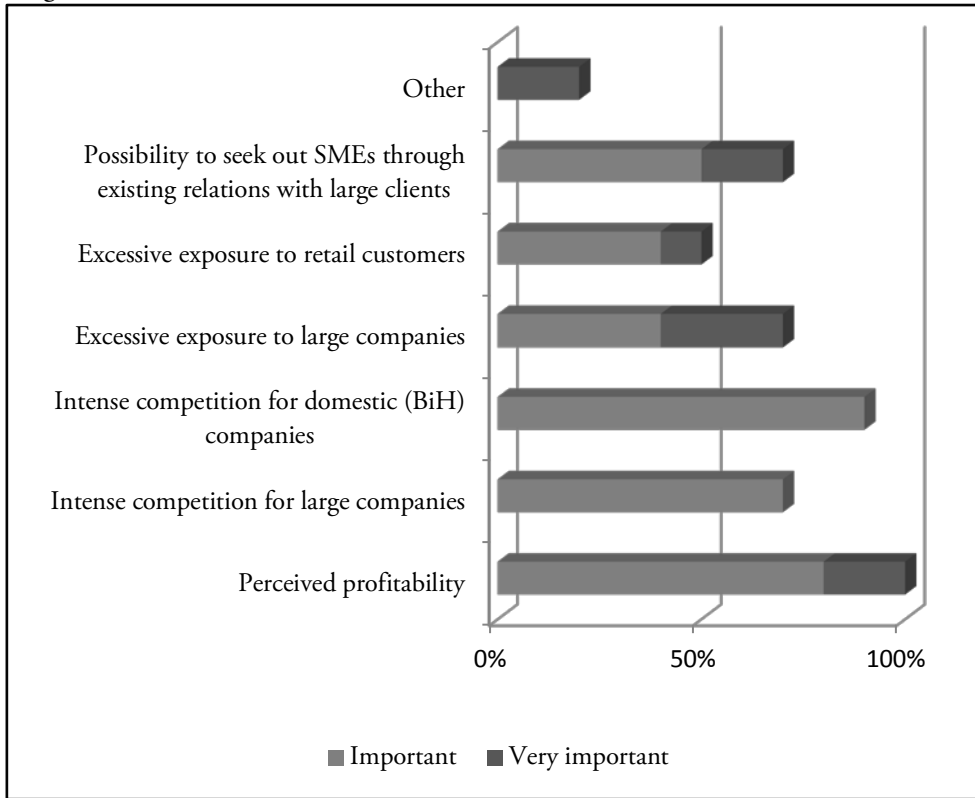


Source: Authors research

Banks usually require some collateral to grant loans to SMEs. The most commonly used collateral is mortgage. The second mostly used collateral is equipment and vehicle pledge, which is reported by 70 per cent of the banks. Furthermore, a high percentage of banks (60 per cent) use bills of exchange and deposits for collateral purpose. Also, important collateral is a co-borrower or a guarantee, while other collaterals such as insurance policies, securities, cession, protective clauses, payment orders, currency clauses, and precious metals are the least mentioned types of banks' protection from SMEs default.

Banks were asked to indicate the driving forces for SME lending and to explain how significant these factors are in defining their level of involvement with the segment. The options available to qualify the importance of these factors vary from not significant to extremely significant. Figure 3 shows the percentage of the surveyed banks that consider these factors to be significant or extremely significant drivers. The percentage of the banks that consider these factors not significant is not presented.

Figure 3: Drivers of Banks' Involvement with SMEs



Source: Authors research

A high level of perceived profitability of the SMEs segment is banks' main motivation for lending to SME clients, because banks expect high profits that will compensate for the higher risks of the segment. The possibility to seek out SMEs through existing relations with large clients was mentioned as a significant driver of banks' involvement with the segment. Many large companies' buyers and suppliers are SMEs, which are already assessed by large companies and characterized as suitable for business cooperation. Also, being in business relations with large companies makes SMEs business safer and more stable.

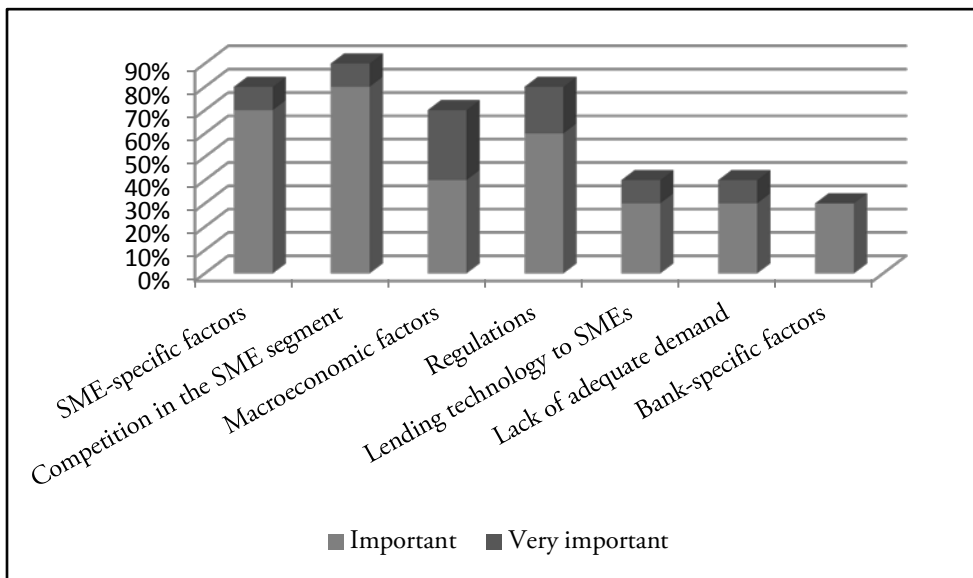
Another important motive is intense competition for domestic (BH) companies and for large companies, since high competition in these segments decreases bank profitability. According to banks' answers, participation in segments of large companies and retail customers has grown, causing excessive exposure to these

segments and therefore being a motive for turning to SME clients. Other driving forces, mentioned by 20 per cent of banks, are banks' strategic orientation to corporate sector, and therefore SMEs, as well as risk dispersion. All the banks surveyed stressed out the intention to increase their involvement with the SME sector in the future. Besides that, the banks which are subsidiaries of foreign banks and bank groups declared that their "parent" banks encourage SME financing.

Obstacles to Banks' Future Involvement with the SME Sector

After discussing the extent of BH banks' involvement with SMEs, as well as motives for such involvement, it is important to determine what obstacles banks face through financing SMEs. For this purpose, the banks were asked to indicate the obstacles to SME lending and to explain how significant these obstacles are in their level of involvement with the segment. The options available to qualify the importance of obstacles vary from not significant to extremely significant. Figure 4 shows the percentage of the banks that consider these factors to be significant or extremely significant obstacles. The percentage of the banks that consider these factors not significant is not presented.

Figure 4: Obstacles to Banks' Involvement with the SMEs



Source: Authors research

Competition amongst the banks in the SME segment is considered as the most important obstacle for SME financing. Therefore, the banks in BH have to compete for SMEs with all their resources in order to stay in the market and/or to increase market share. The second largest obstacle is regulation, with 20 per cent of the banks finding it very important and 60 per cent of banks finding it important. Further explanations by banks indicate that these regulations include not only banking regulation, but also taxes, high documentation requirements, lack of legal uniformity, and weak overall legal environment. SME-specific factors, i.e. factors intrinsic to their nature, are evaluated as very important obstacle by 10 per cent of the banks and important by 70 per cent of the banks. It is obvious that the banks find SMEs harder to deal with in comparison to other clients, which could be connected to high risks and lack of information which characterize SMEs. The fourth important obstacle concerns macroeconomic factors. The banks in BH feel the consequences of overall macroeconomic instability and imbalance, which affects them on the side of financing sources and on the side of lending as well. The obstacles given the lowest importance are lending technology to SMEs, lack of adequate demand, and bank-specific factors, which are considered unimportant by most of the banks.

When asked about possible areas in which government action could help enhance banks' incentives to increase SME lending, the banks provided similar answers. These responses could be summarized as follows:

- tax policy,
- interest rate subventions,
- dispute settlement,
- administrative procedures,
- legal uniformity,
- liquidity, and
- SME environment.

Tax reforms in the form of tax reliefs and lower tax burden for SMEs could have a positive effect on SMEs business and thus enhance demand for banks' services. Interest rate subventions would lead to a decrease in financing costs for SMEs, keeping banks' profit at the same level at the same time. Of course, government should finance only the interest rates for loans directed to production, development, and new job creation. Slow dispute settlement process burdens regular business activities for banks and also for SMEs, which is why banks suggest improvement of

judiciary. Complicated administrative procedures should be simplified through reducing the quantity of documentation as well as the time for its gathering. Because of a complex inner structure of BH, from municipalities, through cantons, entities to state level, there is a problem of different regulations. That is why banks suggest the unifying of regulations at the state level and deeper communication between institutions, which would facilitate banks and SMEs' business activities. A significant problem in BH is illiquidity of companies, which affects their creditworthiness. That is why government should make some steps towards solving this problem, for example with strong regulation on collection of receivables. General liquidity of BH economy could be improved by decreasing the reserve requirement for commercial banks. At the end, fostering SME environment implies developing strong overall business environment, increasing support and investment in SME sector, stimulating production, encouraging start-ups, and protecting domestic production.

Some banks also suggested measures which could be applied on a micro level, such as improving and simplifying the necessary documentation for opening bank accounts and loans, accepting weaker collaterals, focusing more on production companies, analytically considering client's needs, and offering appropriate types of loans. There is a need for partner relationship between bank and SMEs, with bank helping its client to use the best products/services to meet the needs, and client being fair and stable.

Conclusions and Recommendations

Using evidence from BH, this paper investigates a degree of SME banking development with the emphasis on drivers and obstacles to banks involvement with SMEs clients. One of the main findings of this research is that the SMEs sector is becoming a strategic sector for banks. This trend is observed in both, developed and developing countries around the world, as reported in the reviewed literature.

According to the data provided by the banks in BH, the ratio of SME loans to total corporate loans (which can be considered as the most important indicator of banks' involvement with SMEs) ranges from 7 to 85 per cent, with the average of 38 per cent. Besides granting loans, banks offer a wide spectrum of different financial services to SMEs clients that will compensate the higher risks of the segment.

All the banks surveyed stressed out the intention to increase their involvement in the SME sector in the future. Also, the banks which are subsidiaries of foreign banks and bank groups declared that their “parent” banks encourage SME financing.

Regarding obstacles to further development of banks’ involvements with SMEs, the surveyed banks identified intense competition amongst banks for SME clients. Besides that, regulation of the banking sector as well as tax regulation of SMEs is seen as a highly important limiting factor for increasing banks’ lending activities to SME clients.

Furthermore, the surveyed banks identified several areas of government actions which can be undertaken to strengthen the relationship between the financial sector and SMEs. The first action is related to comprehensive tax reforms aiming at lowering tax burden for SMEs in order to boost SME development, which will increase the need for banks to foster that development. The second action is related to the creation of stable funds for interest rate subventions to SMEs, while the third action is related to improvement of judiciary in terms of simplifying administrative procedures and reducing the number of necessary documentation for starting and maintaining a business. Fostering SME environment implies developing strong overall business environment, increasing support and investment in the SME sector, stimulating production, encouraging start-ups, and protecting domestic production.

At the end, banks suggested measures which could be applied on a micro level (*e.g.* improving and simplifying the necessary documentation for opening bank accounts and loans, accepting weaker collaterals, focusing more on production companies, *etc.*). There is a need for partnership between bank and SMEs, with bank helping its client to use the best products/services to meet the needs, and client being fair and stable.

As the survey shows, regardless of the fact that SMEs are a risky client segment, banks are willing to increase their involvement with SME clients. This finding is important in terms of further development and strengthening of the SME sector which is a key developing force of BH and other developing economies.

Based on the survey data regarding obstacles faced by the banks involved with SME sector, several concrete actions to foster relations with SME clients on the banks side can be undertaken.

First of all, in order to stay competitive in their demand of different financial products/services to SME clients, banks need to better understand the requirements of SME clients. This can be undertaken by surveying both existing and potential clients. More personal approach needs to be introduced when doing business with this client segments, meaning that banks products should be more customized to the need of each particular client. SME clients need to see banks as partners who are ready to offer not just financial source for financing their needs, but also financial advice.

Secondly, in order to address issues of inadequate regulation posed to SME clients, banks need to engage in lobbying the government bodies to change regulations governing SME sector. In that respect, the Banking Agency of the Federation of BH and of Republic of Srpska as the state supervisory bodies for banks, together with banks should start initiatives to change laws on taxation of SMEs. The following systematic measures in taxation of SMEs that should be considered and are proven in the EU taxation practices (EC, 2008), to strengthen SMEs capital (and, therefore, to decrease the riskiness of SME clients for banks):

- Deferral of corporate income tax. In other words, corporate income tax should be paid when profit is not retained in the companies, on the portion of profit paid to the owners.
- Allowance for corporate equity (ACE). This incentive is the only tax measure that takes the investment in own equity into consideration. Corporate tax systems discriminate in favour of debt financing since they allow the deduction of interest, but do not take into account the cost of capital in the form of equity financing. This discrimination, commonly known as the “interest tax shield”, encourages debt financing since it lowers the relative cost of debt. The ACE increases the attraction of investment and neutralises tax competition as far as own equity is concerned. It attracts investments because the investment in own equity is compensated regardless of risk.
- Reduction of tax rate for SMEs for the portion of retained earnings.

From banks' perspective, SMEs have access to external financial resources in the form of bank loans of different maturities. The next research question resulted from this research is related to the level of bank financial resources available for SMEs. In that respect, further research will be focused on investigating possible obstacles for SMEs to use banks' financial sources and other financial services as well as identifying necessary steps and activities to bring together SME clients and banks to an efficient and profitable cooperation between these two sectors.

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Causes and Consequences of NPLs in Bosnia and Herzegovina Banking Sector

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Abstract: *This paper analyzes the relationship between risks to which banks are exposed, rate of non-performing loans as well as capital adequacy. The analysis was conducted among the banking sector of Bosnia and Herzegovina. For the purpose of the analysis, the International Monetary Fund data - Core Financial Indicators for the period 2008 - 2013 were used. This study differs from previous researches primarily in the fact that the case study is Bosnia and Herzegovina, where there haven't been similar studies. To analyze and evaluate the model, correlation and regression analysis were used. The paper points to those aspects which deserve further attention in order to achieve better and more efficient management of them. Results indicate the increase in risk-weighted assets and rising rates of non-performing loans as one of the component assets. At the same time the growth rate of non-performing loans leads to the growth in risk-weighted assets and therefore the bank is exposed to major risks. Higher return on assets, as an indicator of business performance and management resources and profitability, leads to capital adequacy improvement. There is a strong correlation between the rate of capital adequacy and non-performing loans and that requires further research. Results indicate that better liquidity control leads to a reduction in the rate of non-performing loans and consequently better liquidity position of banks, and thus reduction in liquidity risk. During the analysis it was found that a large proportion of non-performing loans to total loans leads to deterioration in the financial result which is further reflected in the banks' capital. When we talk about capital adequacy we come to the conclusion that the banking system in Bosnia and Herzegovina, despite all the shortcomings and problems is adequately capitalized.*

Keywords: *Non-Performing Loans; Bank Risk; Capital Adequacy; Correlation; Regression;*

JEL Classification: *G21, E44*

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Introduction

Banking has arrived into process of continuous changes, especially in terms of banking management and operative business. An increasing turbulence of financial markets leads to the strengthening of banking risks. In this environment, making a profitable business has become a very hard and challenging business process. Therefore, bank managers are responsible for creating an adequate business plan and risk controlling policies. Together with all the mentioned above we mustn't neglect the fact that higher profits are followed by higher risks. Management is responsible for negotiating balance and ensures secure, stabile and profitable business.

The precondition for efficient bank supervisory is the establishment of appropriate institutional and regulatory framework. The regulation of banking industry represents the institutional established rules which issue the relationship between balance positions, rules and organization status of banks, status questions and the scope of individual banking business types. This emphasizes the need to define these areas according to international standards and establish the appropriate supervision of the banking business. The requirement for the minimum capital level is settled in order to mitigate the unanticipated losses, and enables the trust of the public about business ability and bank efficiency. In theory, there are four main bank functions: the protection of depositors, the cover of unexpected losses, the control function and the function of bank financing. These main functions indicate the significance and the need for defining the capital requirements. In Bosnia and Herzegovina the supervision is based on CAMEL concept which follows capital, assets, management and liabilities which are the basis for the bank control.

Statute of the banks has prescribed standards which banks have to stick to in their business such as: coefficient of capital adequacy, coefficient of capital participation in liabilities, ratio of short-run placements and capital, ratio of foreign currency assets and liabilities, etc. By-laws agency has prescribed minimum standards which banks have to stick to in their business, such as the management of banking activity, capital and risk. According to the fact that placements are the most risky part of bank assets, their quality presents one of the most risky determinants of stability and business success. Rating assets quality is, actually, rating the credit risk, regarding the identification of potential credit losses which are recognized as expenses reserves for risk assets. The level of risk of the credit portfolio shows the ratio between the calculated potential losses and the total credit exposure. Looking at the level of structure and the quality of credit, portfolios of banking credits have to be carefully

considered in detail. Supervisors have to pay attention to the credit risk rating. The two most important profitability factors are: ROAA (return on average assets) and ROAE (return on average share capital).

Literature review

Analysis of the available literature and the works of other authors helped us to gain a better insight into the state of research in this area. Häusler (2005) investigated that the risk mitigation from banks to some another non-banking institutions, such as insurance companies, decreases bank riskiness. It was shown that it leads to the bank riskiness decreasing, but it also increases the insurance risk which requires some better methods of risk mitigations. Theoretical and practical results imply a positive relation between the market expansion and the rate of non-performing loans which can only be explained by market expansion caused by approving credit to risk groups. On the other hand, capital adequacy is positively correlated with market concentration (Yoonhee, 2006). Further, Živković (2007) came to the new implications of the new regulatory bodies and risk managers in the countries which are new members and candidates for membership in the European Union. It was noticed that the risk managers had to think out of borders and margins settled by their native countries. Otherwise, they could be found in a situation of unexpected loses. It was recommended that national regulatory bodies need to take into consideration the simplicity of VARⁱ model which is broadly expanded and used in the developing countries and it isn't adequate for illiquid and undeveloped markets. Slijepčević and Živko (2008) investigated that the banks are able to recognize the risk of interest rate and instruments which can be successfully used in its controlling. This research shows that there is a noticeable lack of financial derivatives used in order to manage interest rate risks efficiently. Regarding that, Mitić (2009) analyzed credit derivatives, their modalities, advantages and defects. In this paper risk transfers are defined as well as the position and risks which precipitants take on.

Given that the non-performing loans are essentially a macroeconomic problem, rather than the one confined to the financial system, it might also be suggested that central banks (with their “top down” view of things) should be given ultimate responsibility for resisting procyclicality and systemic distress. Such a mandate for the central bank would in fact be consistent with the generally accepted view that price stability should be its principal objective. This consistency becomes obvious if one accepts the fact that the price stability can be as easily threatened by deflation as inflation, if a boom-bust cycle is allowed to become sufficiently severe. Indeed, a

deflationary spiral might in the end prove significantly more dangerous than an inflationary one since monetary instruments can lose their potency in the face of high debt levels and the zero interest rate bound (White, 2009). Emerging-market countries only have an unsecure hold on wealth, and are becoming weaker globally. When they get into trouble, they literally run out of money or at least out of foreign currency, without which they cannot survive (Johnson, 2009). Impelled by the recent financial crisis Chu (2011) investigates actions which policy creators in some countries have implied as a response to crisis in order to save the financial system from declining and depression. Through the analyses of application of the pillar two of Basel II, Mahmutović, H., Ćesić, Mahmutović (2011) showed what is expected from banks regarding the maintaining the required level of capital. Račić and Barjaktarović (2011) analyzed the Basel II application according to the Croatian credit portfolio. It was concluded that the initiation of this standard on the financial market leads to positive effects on the increase of liquidity and the development of the entire economy. Also, the influence of the presence of interbanking deposit market on to the development and performances of the banking sector in Croatia was investigated. The results imply that the banks have to improve their response strategies on to perceiving systemic risk by developing general interest rates policies, by determining maturity structures of the loans and by changing the level of involvement on to global interbank market. The studies have proven a significant negative relation of exports and industrial production against NPLs (Fawad and Taqadus, 2013).

By using the data from the Pakistan banking sector, the results suggested the validity of the traditional view that, i.e. dispersed ownership (publicly owned banks) reduces the bank's performance and enhances the bank's riskiness (NPLs), whereas the rejected view that concentrated ownership (privately owned banks and foreign banks) enhances the bank performance and erodes the bank riskiness (Fawad, 2013). Customers will feel the impacts of Basel III as borrowers and investors. A higher capital conservation buffer leads to higher regulatory equity costs. Even though capital reservation for classical small and medium sized companies (SME), especially in Germany, remains constant, the implementation of the countercyclical buffer leads to additional equity costs as well. This effect will occur especially in banks where the leverage is relatively high. Customers will get a higher interest rate for their deposits. In the author's opinion, the effect on the liability side of the banks will be much higher than the additional equity costs on the asset side. Banks have to care and optimize their risk management and strategy (Sevend and Svoboda, 2013). The credit boom explanation is the most plausible predictor of

crises since the late nineteenth century; global imbalances have only a weak correlation with financial distress compared to indicators drawn from the financial system itself (Taylor, 2013). Specific covariates are found meaningful. Recommendations include the policy steps to complement the sound financial system with a healthy macroeconomic environment to reduce non-performing loans in commercial banks in Pakistan. Moreover, the need for a policy approach with emphasis on the opposite credit culture and lending policy designed with pertinent economic and financial factors is highlighted (Mehamood, Zahid and Nisar, 2013). In order to test the influence of global financial crisis on banks' non-performing portfolio movements as well as the liquidity on banks in Bosnia and Herzegovina's profitability, a simple regression model was used. The analysis was implemented on three periods: (1) 2002-2006, (2) 2006-2008 and the last one is for the period 2009-Q2/2013. Direct relations between liquidity, non-performing loans and return on equity have been disclosed. (Alihodžić and Plakalović, 2013)

Bosnia and Herzegovina banking sector has been significantly changed compared to its beginnings. It's necessary to emphasize the increasing significance of banks for the entire economic system. Further, indicators show an increasing share of assets into GDP. High credit growth was noticeable during the whole period (before and even during the crisis). Also, credit demand is growing extremely fast. The banking sector and its assets were well managed and the level of bad assets was kept at a low level until the arrival of the financial crisis. As a consequence of this state, more rigorous credit policy was settled underscoring the importance of adequate credit risk management. There is a noticeable increase of risk-weighted asset to net capital. Temporary capital adequacy of banking sector is at a satisfactory level and it's above the Basel Committee requirements.

Table 1: Main Characteristic of Bosnia and Herzegovina Banking Sector

Stabile capitalisation	- Regulatory capital, M (KM)	2.826
	- Total risk-weighted asset, M (KM)	16.485
	- Capital adequacy rate	17,1 %
Lower quality of credit portfolio	- Total loans, M (KM)	14.637
	- Non-performing loans, M (KM)	1.726
	- Non – performing loans to total loans	11,8 %
Slightly lower liquidity	- Liquid to total assets	27,3 %
	- Liquid assets to short-term financial liabilities	46,7 %

Source: *Financial stability report 2013, Central Bank of Bosnia and Herzegovina*

Methodology: Data

For the purpose of this paper the International Monetary Funds' data (Core Financial Indicators) for period 2008-2013 were used. Some of them were used in their original form while others were adjusted to the research needs. Net capital to total risk weighted asset corresponds to methodology capital adequacy ratio (CAR) calculation, which is prescribed by Basel Core Principles for internationally active banks in the G10 countries, except that the calculation and analysis of the capital does not include the impact of the country risk and transfer risk. Return on assets (ROA) is one of financial soundness indicator and is intended to measure bank's efficiency in using its assets. NPLs to total loans represent an indicator of basic set of FSI. It is calculated as the ratio between the non-performing loans to total loans. This indicator is a measure of loans quality. Return on equity (ROE) measures the efficiency of banks in the use of capital. Therefore following variables were defined:

Table 2: Variable Definition

Variable	Type	Coded value
Capital adequacy	One of Core Financial Indicators taken in original form	V1
NPLs	Level of non-performing loans, also one of Core Financial Indicators taken in original form	V2
ROA	Return on asset, one of Core Financial Indicators taken in original form	V3
ROE	Return on equity, one of Core Financial Indicators taken in original form	V4
Risk-weighted asset	One of Core Financial Indicators taken in original form	V5
Liquid_asset_to_long-term_liabilities	One of Core Financial Indicators taken in original form	V6
Total_loans_to_assets	Measured as ratio of appropriate Core Financial Indicators	V7
Liquid_asset_to_total_asset	Measured as ratio of appropriate Core Financial Indicators	V8

Source: Authors' own work

Methodology: Analysis

In accordance with the practice of scientific research different scientific methods were used during the research conducting and writing of the paper. In formulation and presentation of the scientific research different scientific methods were used. Two groups of methods were used in data analysis: qualitative and quantitative. Most of the analysis is quantitative, but the significance of qualitative analysis can't be ignored. Primary methods in the process of proving the hypotheses include:

- Mathematical methods, the application of different types of statistical analysis in order to test and evaluate hypotheses and assumptions.
- The method of analysis and compilation which was used in theoretical and in the empirical part of the paper.
- The method of immediate incomplete induction which helped to bring some general conclusions based on measurement results.

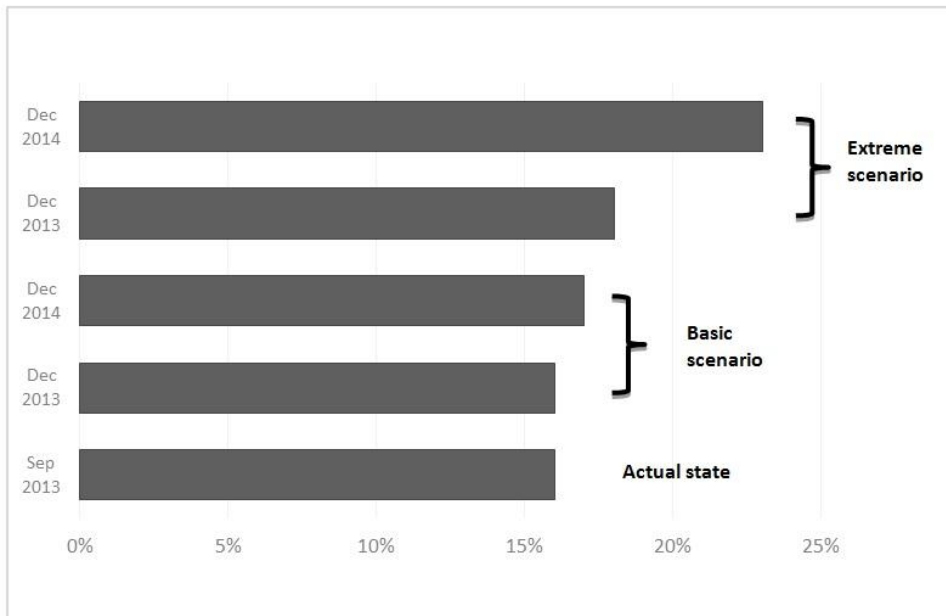
During the desk research the methods of analysis and synthesis, inductive and deductive, as well as the methods of generalization and specialization were used. For the empirical part of the research, secondary data were used. They were processed by an appropriate mathematical algorithm in order to be ready for further processing and analysis. Also the F-test was used in order to reveal the regression model overall predicting significance (p-value was lower than 0.001). The results of Durbin-Watson of 2 mean that the residuals are uncorrelated. Further causal and functional analysis was used. Causal analysis was used in order to reveal the interconnection between certain risk factors and their influence on to non-performing loans level. Functional analysis was used to understand the relationship and causality between the above mentioned factors. By using the method of synthesis different individual conclusions were combined into one global conclusion.

Findings

The increasing trend of non-performing loans continues to represent the greatest threat to the health of the banking system and financial stability in Bosnia and Herzegovina. The share of non-performing loans in total loans in banking systems at the end of the third quarter of 2013 was 14.86%. During the economy slowdown until the end of 2013 the share of non-performing loans in total loans increased for 23 basis points, also further increase by 1.4 percent in 2014 is expected. If these

expected shocks assumed in the extreme scenario get real, NPL ratio will increase by 3.1 percent in 2013 and by additional 4.7 percent in 2014.

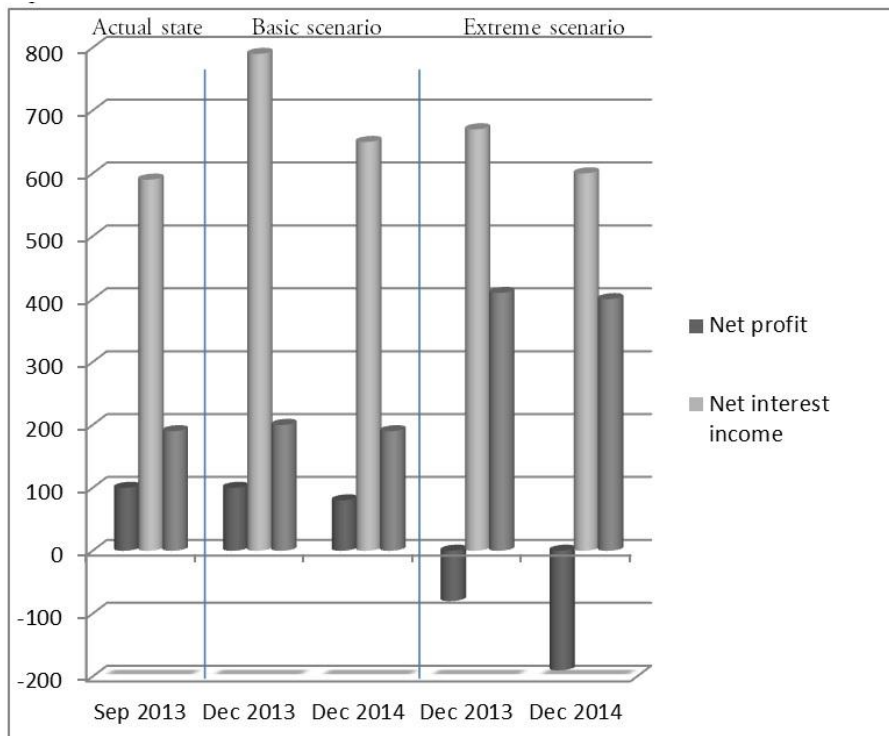
Figure 1: Share of NPLs in Total Loans



Deterioration in quality of the credit portfolio in the previous periods is especially emphasized in the real sector, in which the increasing share of NPLs to total loans was registered during the third quarter. In case of materialization of the predicted shocks, NPLs ratio for businesses increased by 3.6 percent until the end of 2013 and by additional 4 percent until the end of 2014.

The consequence of the assumed significant slowdown of the economy in the extreme scenario is increased in costs of funding due to the deterioration in quality of the loan portfolio. Significant financing costs increase has resulted in a negative financial result in most banks in the banking system. A number of small banks in the system, which are primarily oriented to the firms with small and medium businesses, stress test results have proven deterioration of financial results due to the predicted active interest rates for the whole banking system which are significantly lower than the average interest rates by which banks are placing their resources.

Figure 2: Indicators Movement



Source: *Financial stability report 2013, Central Bank of Bosnia and Herzegovina*

Financing method influences stress test results significantly. Banks which hold their adequate level of capitalization by having an additional capital, which consists of the sub ordinary debt mostly, are exposed to greater risks when we talk about financing the source stability. The assumptions from stress tests, which imply that subordinated debt will be paid, have a significant influence on the results in the sense of capitalization which results capital reduction in 2014.

Beside the increasing trend of NPLs, which was identified as the most significant weakness of the banking system in Bosnia and Herzegovina, a significant risk is caused by investing into domestic debt securities, firstly the public sector, as well as by significantly reducing the financing from abroad. Therefore it will be necessary to focus the attention on banks capitalization, especially to those which have significant investments into state debt securities, as well as following the effects of further deleveraging of foreign banks on the banking system.

The identified key weaknesses in Bosnia and Herzegovina’s banking system will also be present in further periods. Therefore we can expect that the banks where the tests were conducted had recapitalization needs. If those banks don’t undertake adequate actions in order to remove the identified weaknesses in further tests, these recapitalization needs will be shown, too.

Primarily, a correlation analysis between the above mentioned variables was conducted. In order to calculate direction and intensity, the Pearson’s correlation coefficient was used (Somun - Kapetanović, 2008):

$$r = \frac{SS_{xy}}{\sqrt{SS_{xx} \cdot SS_{yy}}}$$

Where:

$$SS_{xy} = \sum (X_i - \bar{X})(Y_i - \bar{Y})$$

and

$$SS_{xx} = \sum_{i=1}^n (X_i - \bar{X})^2$$

and

$$SS_{yy} = \sum_{i=1}^n (Y_i - \bar{Y})^2$$

The calculation obtained the following:

Table 3: Correlation Matrix

	V3	V1	V2	V4	V5	V6	V7	V8
V3	1	<u>.625**</u>	.216	<u>.991**</u>	-.046	-.430*	.124	-.421*
V1	<u>.625**</u>	1	<u>.567**</u>	<u>.580**</u>	.294	-.589**	.215	-.693**
V2	.216	<u>.567**</u>	1	.111	<u>.684**</u>	-.884**	.336	-.853**
V4	<u>.991**</u>	<u>.580**</u>	.111	1	-.100	-.344	.099	-.347
V5	-.046	.294	<u>.684**</u>	-.100	1	-.577**	.276	-.597**
V6	-.430*	-.589**	-.884**	-.344	-.577**	1	-.382	<u>.936**</u>
V7	.124	.215	.336	.099	.276	-.382	1	-.345
V8	-.421*	-.693**	-.853**	-.347	-.597**	<u>.936**</u>	-.345	1

* Significant level 0.01; ** Significant level 0.05

Source: Authors’ own work

In the above table, the correlation is visible as well as its direction and intensity between variables. The underlined values represent a strong positive correlation, while bolded values represent a strong negative correlation. If we talk about Capital adequacy, there are strong positive correlations with the return on assets, return on equity as well as with level of non-performing loans. That means that better capital adequacy leads to higher return on assets, higher return on capital but also to higher level of non-performing loans what isn't such good news. Therefore, it can be concluded that the banks with higher return on assets have better capital adequacy as well as the return on equity and vice versa. Also, there is strong negative correlation with Liquid asset to long-term liabilities.

When we consider NPLs there are strong positive correlations with the capital adequacy and the return on average assets. There are strong negative correlations with liquid assets to long-term liabilities and liquid assets to total assets. Hence, better capital adequacy and higher return on average assets lead to the increase in non-performing loans which represents a surprising relationship which causes a more detailed investigation. On the other hand, higher levels of non-performing loans decrease the liquid position of the bank, what was expected. Since payment problems increase, the liquidity problem also occurs.

The correlation of return on asset and return on capital as well as capital adequacy is strong positive. These mean that as the return on equity increases, the capital adequacy, as well as the return on assets, gets better. When we consider return on assets there is strong positive correlation with NPLs. This result is logical, especially if we take into consideration that more suspicious loans lead to higher risks and that increases the importance of assets.

Liquid assets to long-term liabilities as well as liquid assets to total assets negatively correlate with all analyzed variables except one. The positive correlation between these variables is a consequence of the same structure of ratios. Thus, the increase of liquid position of the bank leads to the decrease in all other ratios and vice versa. That means that banks have to find optimal strategy to balance between risk and liquidity. The ratio of total loans and assets positively correlates with all the variables except those which indicate liquidity. It was found that when the bank loan increases, the liquid position decreases.

Based on all the facts listed above we can conclude that the greatest positive correlation is noticeable between the return on assets and the return on equity. For this research, a relevant and an interesting correlation is the one between the level of non-performing loans and the return on average assets. Since this correlation is one of the main goals of this paper these variables regression analysis was employed in order to settle the model of impact and variables behavior. For the model presentation the following formula was used (Somun - Kapetanović, 2008):

$$Y_i = a + bX_i + u_i \quad Y_i = \alpha + \beta X_i + \varepsilon_i$$

While the Y_i represents the value of the dependent variable, X_i the value of the independent variable, α and β are parameters which determine the intensity of the independent variable and random values. Our models, takes dependent variables such as: NPLs, Capital adequacy and Risk-weighted_asset and independent: ROA, NPLs, Risk-weighted_asset and Liquid_asset_to_short-term_liabilities. Therefore in following equations different causality models are presented. Since the detected correlations, we wanted to test the level of dependency between these variables. Therefore we have employed above mentioned formula for these variables and calculation results are presented below.

$$\text{NPLs} = -651.857 + 0.684 * \text{Risk-weighted_asset} + 30.727$$

This means that if we increase the Risk-weighted asset for one unit, NPLs will increase for 0.684 units. That means that, taking into consideration the above mentioned correlation between variables, by increasing the average assets level of non-performing loans, one of the asset components also increases. The simultaneous increase of the non-performing loans leads to the increase in average assets as well as in bank risk exposures. Thus, if the average asset increases for one unit, the level of non-performing loans will, also, increase for 0.684 units. Further, as it was mentioned above, the significant correlation between the capital adequacy, the return on assets and the return on equity is noticeable. Therefore, the following model is defined:

$$\text{Capital adequacy} = 161.589 + 0.625 * \text{ROA} + 5.368$$

Hence, if we increase the return on assets for one unit, the capital adequacy will increase for 0.625 units. This leads to the conclusion that better return on assets, as an indicator of efficacy and resources management, leads to better capital adequacy. The quite high correlation between the capital adequacy and the level of non-

performing loans require further research. Therefore, the following regression model as the first step in causality disclosure is defined:

$$\text{Capital adequacy} = 155.491 + 0.567 * \text{NPLs} + 5.667$$

By including the dependence of non-performing loans in this model, a more complicated but more precise, comprehensive and clearer model is defined:

$$\text{Capital adequacy} = 155.491 + 0.567 * (-651.857 + 0.684 * \text{Risk-weighted asset} + 30.727) + 5.667$$

An extremely negative correlation which prompted to determine the behavioral model is the one between the non-performing loans and the bank liquid position. Namely, the logical conclusion which is expected from the correlation matrix is that the increase in non-performing loans, followed by the increase in problems with debt collection, liquidity problems increase as well as the liquidity risk. Therefore, it can be concluded that the level of non-performing loans is the main determinant and entry of the liquidity risk.

$$\text{NPLs} = 518.421 - 0.884 * \text{Liquid_asset_to_short-term_liabilities} + 19.705$$

That means that the increase in ratio of liquid asset to short-term liabilities for one unit leads to the decline in the level of non-performing loans for 0.884 units. This is one of the proofs that better liquidity control leads to the decline in the level of non-performing loans followed by the better bank liquid position and liquidity risk reduction. Equally, risk-weighted average asset negatively correlates with the bank liquid position and that is defined through the following model:

$$\text{Risk-weighted asset} = -1312.1614 - 0.597 * \text{Liquid_asset_to_total_asset} + 367.826$$

Therefore, the increase in the indicator of the liquid position for one unit leads to the decline into risk-weighted asset for 0.597 units. Equally, the capital adequacy negatively correlates with the liquid position which is represented by the following model:

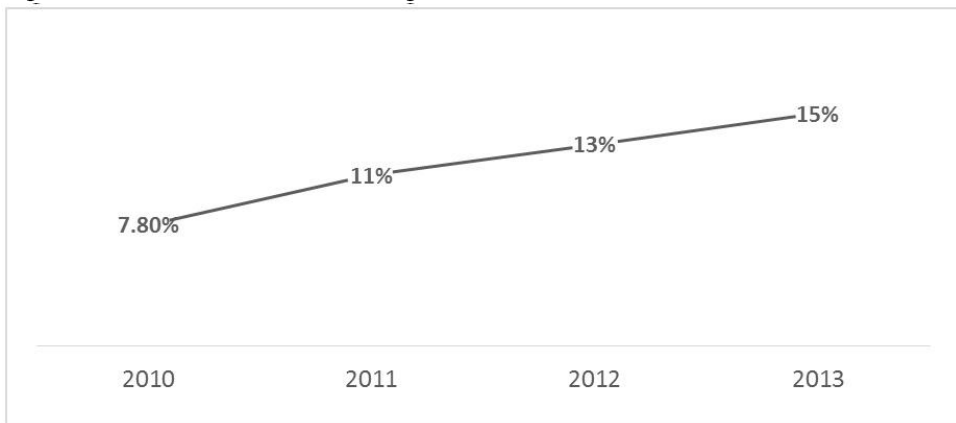
$$\text{Capital adequacy} = -210.162 - 0.693 * \text{Liquid_asset_to_total_asset} + 4.9585$$

The increase in the liquid position for one unit leads to the deterioration in capital adequacy for 0.693 units.

Discussion

According to the selected indicators of financial health in Bosnia and Herzegovina for the fourth quarter of 2013 non – performing loans to total assets was 11.43%. The loans represent 70% of total assets of the banking sector in Bosnia and Herzegovina. Therefore, the credit risk is the most common in total risks of the banking sector. Bearing in mind the size of the credit portfolio, the credit analysis and the measurement of its risk, a very careful approach is required in order to estimate and control the potential risks. By observing the ratio of total loans as well as the non-performing loans in Bosnia and Herzegovina banking sector, it can be noticed that the total loans have increased more rapidly than the non – performing loans.

Figure 3: Share of Non - Performing Loans in Total Loans



At the end of 2013 total loans were 16.4 billion BAM and they increased for 6.9% compared to 2012. The share of the non - performing loans in total loans at the fourth quarter of 2013 was 15.13% and it increased compared to the previous year where this indicator was 14.86%. In 2012 the value of this indicator was 13.47% which clearly indicates the fact that the asset quality is still the greatest source of risk to Bosnia and Herzegovina banking system.

In the fourth quarter of 2013 the indicator of return on average assets was -0.12% and it declined for 72 basis points according to the same period of the previous year. The decrease in value of this indicator was caused by the decline in the net profit of the entire system, followed by the slight increase of the average asset. The return on average equity in the fourth quarter of 2013 was -0.93% which is 5.84% lower according to the same period of the previous year. The decline in the net profit with the simultaneous increase of the average equity resulted in the decline of this indicator annually.

According to data for the fourth quarter of 2013 the three liquidity indicators of Bosnia and Herzegovina banking sector recorded the improvement of value according to the same quarter of the previous year as well as in accordance with the previous quarter of 2013 year. Liquidity indicators value improvement in the last quarter could be, potentially, explained by the advent that banks with foreign property withdrew resources from their parent bank at the end of the year. The indicator liquid assets to total assets on the level of the entire banking system was 26.35% and it was improved for 92 basis points according to the same quarter in the previous year and for 107 basis points according to the previous quarter of 2013. The improvement of this indicator is a consequence of a faster growth of the basic liquid asset to the short-term financial liabilities. This improvement indicates greater banking sector ability in short-term liabilities servicing. However, this increase could be temporary because of the advent that banks with foreign property withdrew resources from their parent bank at the end of the year and by the beginning of the year they returned these assets to their parent banks.

The indicator of the short-term financial liabilities to the total financial liabilities in the fourth quarter of 2013 recorded a slight improvement according to the previous quarter as well as in accordance with the same quarter of the previous year. The value of this indicator at the end of the fourth quarter of 2013 was 67.27% which is 43 basis points lower than in the previous quarter and 66 basis points lower than the same quarter of the previous year. The decrease in value was caused by higher increase of the long-term liabilities to short-term liabilities.

Table 4: Banking Sector Capital Adequacy

Stress test results	Basic scenario		Extreme scenario	
	2013	2014	2013	2014
Level of capital adequacy, %	17,8	17,7	16,7	156,6
Recapitalization needs, billion BAM	12,1	60,9	27,7	164,4
Number of banks which need recapitalization	4	7	6	11

Source: Financial stability report 2013, Central Bank of Bosnia and Herzegovina

Results presented in above table lead to the conclusion that Bosnia and Herzegovina banking sector is still well capitalized, even though some, mainly smaller, banks are facing capital adequacy problems.

Conclusion

In accordance with the temporary financial crisis it's impossible to talk about it without paying attention to one of the main causes - NPLs. Therefore the significance of this paper is in the fact that it shows an insight into the greatest problems to which banks are exposed – liquidity and stability. Thus, it's necessary to reconsider the correlations and mutual interactions between the banking risk indicators, the level of non-performing loans and the capital adequacy. Those disclosures can be the basis for problem solution and a good foundation for new procedures creation. So, these research results give a good insight to managers and can help them to develop better and more efficient risk management methods.

According to everything that is listed above, we can conclude that the banks in Bosnia and Herzegovina have to pay attention to the non-performing loans as one of the main threats to their liquidity and stability. The conducted analysis has shown the need for adequate credit monitoring in order to maintain the stable business and the trust of the depositors and ensure the long – term sustainability as well. The main limitation of this study is the multifactorial nature of the analyzed problem. Therefore, it requires further research in the sense of other factors influence, such as the state in the economy, inflation etc.

This analysis can be the basis for further research and causality examination. Further research can go into several ways. The first is the ratio analysis for each bank in Bosnia and Herzegovina and the second one is the analysis of these indicators for the

developing countries. Also, the analysis can be extended by macroeconomics factors involvement, such as GDP real growth, inflation index etc.

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ⁱ Value at risk - A statistical technique used to measure and quantify the level of financial risk over a specific period of time

The Role of Intercultural Communication Competence on Service Reliability and Customer Satisfaction

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Abstract: *The article presents an inclusive framework on three major constructs namely intercultural communication competence, service reliability and customer satisfaction in the grocery retail settings in Malaysia. The constructs' validity and reliability were examined based on structural equation modeling. Based on the proposed framework, a number of propositions were developed to facilitate empirical investigation on intercultural communication competences of the selected grocery retail outlets. This contributes to the development of a theory based path model that links the intercultural communication competence to service reliability and customer satisfaction. While numerous scholars have considered the extensive topics of service quality and customer satisfaction, however, none of those studies explored on the critical role of intercultural communication competence and incorporated the construct with perceived service quality and customer satisfaction. One of the most critical finding of the study is the dimension of perceived service quality and intercultural communication competence have positive relationship and it also progressive finding for further research on other dimensions of perceived service quality.*

Keywords: *Intercultural Communication Competence; Service Quality; Customer Satisfaction; Service Reliability and Retailing.*

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Introduction

Increasing the recognition of the significance of services, there is a growing awareness that the competitive strategies in retailing may integrate a framework of intercultural service quality assessment and enhancement (Ahmad et al., 2014; Briones et al., 2009). This has given rise to the notion of measuring the service quality (SQ) with cultural aspects in retailing, which has become a crucial element in the retailer business (Cameran et al., 2010). Integration in emerging economies, globalisation, elimination of trade barriers and innovations in technology have facilitated and compelled the retailers to internationalise many value chain activities (Hutchinson et al., 2009). Nevertheless, despite suggestions of enlarged cultural homogeneousness (Keillor et al., 2001), the retailers continue to struggle in overseas markets due to their inability to understand and overcome cultural differences (Hopkins et al., 2009). Obviously, the evaluation of service experiences and measurement of customer satisfaction cannot be performed without cultural dimension (Sharma et al., 2012; Ihtiyar et al., 2013). Developments on multiculturalism in marketing in the past decades have focused on how cultural aspects influence customer choices (Huang et al., 2013), interpersonal interaction (Sharma et al., 2012), employee performance (Kong and Jogaratnam, 2007; Sizoo et al., 2005), service evaluation (Sharma et al., 2012; Paswan and Ganesh, 2005), customer satisfaction (Hopkins et al., 2009) and purchase intention (Teng and Laroche, 2007). Increasingly greater complexity of the retail atmosphere - density of growing competition, demanding customers and shopping attitudes of customers, the capability of retailers to offer a satisfactory service may be crucial and attractive manoeuvre to differentiate and actively satisfy the customers (Martinelli and Balboni, 2012). In fact, the tools usually used by the retailers for competition and promotion, such as low price and combined merchandise offers, may influence the effectiveness in competition negatively since the offers perceived as homogeneous by customers. In other words, in order to improve level of service performance as well as the customers' perception of it, the retailers make different moves to better satisfy their potential customers. When managing cultural issues in the multicultural atmosphere, intercultural communication competence (IC) that deals with having the right mind set, skill and sensitivity, is rising as a crucial aspect for intercultural service encounters (ISEs) and has become a new research theme in ensuring customer satisfaction (CS) (Sharma et al., 2012; Ladhari, 2009). CS with highly satisfied service experiences has positive effect on enhancing customer retention, long-term business success, positive word of mouth, loyalty, cost-effectiveness and sustainable competitiveness (Martinelli and Balboni, 2012; Kim et al., 2010; Ladhari, 2009).

Although, general acceptance on significance of IC, particularly for service providers operating in various cultural settings, most of existing discussions are conceptual and qualitative based. However, many authors such as, Sharma et al. (2012); Ueltschy et al. (2007); Friedman and Antal, (2005) suggest that measurement of service quality for service settings in multicultural societies may include cultural dimension for better understanding customers from various cultural backgrounds.

However, some the existing models do not include 'culture' as a dimension such as SERVQUAL and RSQS. Therefore, the gap exists in providing empirical evidence on the relationships between the intercultural communication competence, service reliability and customer satisfaction, particularly in a specific industry type that operates in multicultural atmosphere and emerging economy.

The aim of the study is to examine the role of intercultural communication competence (IC) on service reliability (R) and customer satisfaction (CS) in grocery retailing of Malaysia. This study particularly investigates IC in terms of inter-role congruence (IC4) and interaction comfort (IC1, IC2 and IC3), as highlighted in Table2. The study examines service reliability aspect of perceived service quality, which was developed by Dabholkar et al. (1996). Furthermore, the dimension of customer satisfaction is based on product quality (CS1 and CS2), product assortment (CS3) and price (CS4).

In order to meet the research goals, the study improves and empirically investigates the theoretical model of interrelationships among these three constructs. According to the proposed framework, R mediates the impact of IC on CS. Service reliability and validity of the constructs was assessed using confirmatory factor analysis. Then, structural equation modelling (SEM) was employed to estimate the interrelationships among constructs and to compare proposed model.

Following this introduction section, the present study indicates a literature review and develops the hypothesised relationships among the constructs of the proposed model. The methodology of empirical study of the proposed model is then represented. This is followed by a presentation of the research findings as well as their implications.

Literature Review

Intercultural Communication Competence (IC)

Intercultural communication competence is the ability to think, discriminate the differences, manage the experiences appropriately, and build an efficient communication with people from different cultures in the multicultural society (Friedman and Antal, 2005). Instead of this widely definition, there is a consensus about its influences on intercultural interactions (Lloyd and Luk, 2011; Ward, 2008). People with higher IC show a greater capability to learn different aspects of other cultures, such as foreign languages and cultural norms. Furthermore, they can integrate with other cultures undoubtedly (Lustig and Koester, 2009). As emphasised in the interdependence theory (Surprenant et al., 1983), each part of interaction has been influenced from another part, because the behaviour of the first part is having an impact on the second part. Furthermore, interactions among intercultural service encounters (ISEs) may establish or eliminate the barrier due to perceived dissimilarities in behavioural norms (Lustig and Koester, 2009). Thus, individuals with higher IC show more respect and responsiveness for people from other cultures, respond to unfamiliar behaviours in a non-judgmental way without showing visible or perceivable discomfort (Sharma et al., 2012). Furthermore, they willingly use their knowledge and experience about other cultures to manage various expectations and reduce the uncertainties of ISEs during the service delivery, compared to those with lower IC (Wang and Mattila, 2011; Lustig and Koester, 2009).

Although interaction comfort has significant impact on achieving, a satisfactory outcome that is particularly related customers' collaboration (Sharma et al., 2012). However, expectations or perceptions and interactions of customers' in the service marketing literature have been tested without IC in past decades (Wang and Mattila, 2010; Yu et al., 2001). Table 1 represents several previous studies related to the intercultural context in the marketing.

Due to the achievable service outcome is highly related the role clarity (Sharma et al., 2012), role clarity becomes one of the crucial items for the model. Role clarity is identified as the both sides of interaction recognise and accept each other's role in interaction (Solomon et al., 1985). Rarely, ISEs in familiar cultures, they may have different expectations or perceptions about each other, or they do not always tolerate with their role in society (Baker et al., 2009). Therefore, as mentioned in role theory

(Solomon et al., 1985), confusion or misunderstanding about role clarity breaks the communication among ISEs and lead to dissatisfaction.

Table 1. Some of the Recent Conceptualizations of Intercultural Communication Competence in the Marketing Literature

Author	Concept	Definition
Sharma et al. (2012)	Intercultural	“This article presents a conceptual framework for intercultural service encounters applicable to both consumers and employees.” (p. 227)
Baker et al. (2009)	Intercultural	“This paper aims to report a study that focuses on the moderating role of involvement in the relationships between consumer contact employees’ consumer orientation and service quality perceptions and satisfaction.” (p.115)
Reimann et al. (2008)	Intercultural	“This article addresses the issue of cultural differences in the context of business-to-business relationships.” (p.63)
Ward (2008)	Intercultural	“The paper pays tribute to the work of John Berry and the organizational frameworks that he has proposed for research on identity, acculturation and intercultural relations. It also suggests that over-reliance on these frameworks may constrain developments in the field.” (p.105)
Kong and Jogaratman (2007)	Intercultural	“This research extends previous work by examining cross-cultural differences and intends to provide a better understanding of restaurant consumers in the USA and Korea, as well as to enable restaurant operators and managers to better service their clientele in the global marketplace.” (p.275)
Friedman and Antal (2005)	Intercultural	“This article offers an alternative approach to intercultural communication competence, ‘negotiating reality’, that engages cultural conflict as a resource for learning.” (p.69)

Sizoo et al. (2005)	Intercultural	“This study proposes adding to that trend by attempting to measure the effect of intercultural sensitivity on the cross-cultural performance of service employees.” (p.245)
Ryoo (2005)	Intercultural	“This study presents an in-depth analysis of talk between Korean immigrant shopkeepers and their African-American consumers in service encounters.” (p.79)
Paswan and Ganesh (2005)	Intercultural	“This study empirically investigates the notion of being comfortable with social interaction in a foreign country (interaction comfort) and its impact on how service quality is evaluated.” (p.93)
Hopkins et al. (2005)	Intercultural	“The value of this paper is that it uses cultural identity theory to extend an existing model that examines the nature and determinants of consumer expectations of service.” (p.329)
Yu et al. (2001)	Intercultural	“This paper presents a conceptual framework and research approach for examining the intercultural communication competence (IC) of Chinese tour guides, the factors that contribute to IC, and the impacts of IC on Chinese tourists’ satisfaction with their experience” (p.75)

Author’s own work

Service Quality from the Retail Perspective

Service quality (SQ) is a fundamental strategy for sufficient superior performance in grocery retailing; however, customers’ demand not simply products or affordable prices but also convenience-shopping experience (Martinelli and Balboni, 2012). Previous studies addressed to measuring SQ in the retailing settings have often started from SERVQUAL (Parasuraman et al., 1988; 1985). The scale operationalizes SQ by calculating differences between customer’s expectations (desired level) and recent performances (perceived level), by evaluating both in relation to 22 items that are classified under five broad categories. The services are evaluated as excellent if recent performance is higher than expectations; it is considered as satisfied, if it only equals expected level; services are classified as dissatisfied, if it does not meet expectations of customers (Vesel and Zabkar, 2010). The SERVQUAL scale has been examined in great number of studies conducted in

various service settings such as; health care (Padma et al., 2010), professional services (Cameron et al., 2010), information systems (Kettinger et al., 2009), tourism industry (Jani and Han, 2011), higher education (Trivellas and Dargenidou, 2009), professional services and fast food (Cronin and Taylor, 1992), banking (Amin and Isa, 2008) and retail settings (departmental and/or discounted stores) (Vesel and Zabkar, 2010; Zhao et al., 2002; Mehta et al., 2000; Dabholkar et al., 1996).

Yet, SERVQUAL scale has also been criticized by many authors such as, Das et al. (2010); Caro and Garcia, (2007); Mehta et al. (2000) and Babakus and Boller, (1992); they suggested that model requires modification and customization to specify features of the industry. The first reason of criticism is as highlighted in study of Wall and Payne (1973), customer's expectations (desired level) of services marked higher than performance (perceived level) of services by customers. Another challenge in the model, realization of E (expectation) and P (perception) version of SERVQUAL caused confusion on participants, and data quality is influenced by confusion and apathy (Brandon-Jones and Silvestro, 2010; Bouman and Van Der, 1992). For instance, Babakus and Boller (1992) used the SERVQUAL scale to measure SQ in their study, and they found that, as employed in the SERVQUAL scale, score relies in perception more significant than expectation. Finn and Lamb (1991) used SERVQUAL scale among four different types of the retailers in numerous sizes, and they concluded that scale is not applicable for the retailers without any industrial justification Ladhari (2009). Another study that was conducted by Zhao et al. (2002), used SERVQUAL scale for measuring SQ in the departmental stores in China, and outcome of SERVQUAL scale did not harmonize in retail sector of Mainland China properly. SERVQUAL is not suitable for retail settings due to composite nature and specific requirements of retail business settings and their customers (Martinelli and Balboni, 2012; Das et al., 2010; Vesel and Zabkar, 2010). Considering these aspects, lack of measurement scales particularly addressed to measure SQ in retailing, Dabholkar et al. (1996) introduced to retailers a validated specific scale that is called Retail Service Quality Scale (RSQS). Dabholkar et al. (1996) filled critical and significant gap in context of service marketing. Authors developed and empirically validated the RSQS. Model consists of 28-item and 17 of them have been adapted from SERVQUAL, and other items have been developed by their literature review, phenomenological interviews, exploratory depth interviews and qualitative research. Dabholkar et al. (1996) proposed RSQS has hierarchical factor structure comprising five basic dimensions as physical aspects, personal interaction, policy, problem solving, and service reliability.

Reliability

According to Dabholkar et al. (1996), service reliability construct consists of mainly two dimensions that are titled as inspiring “*promises*” and “*doing it right*”. The most important reason of concentration to this construct is intangible services, which usually requires greater service reliability between customers and service providers. Therefore, service reliability has a greater impact on services than on goods (Dabholkar et al., 1996).

Our knowledge on SQ differs in comparison with the home and host culture is poor or even lacking, particularly service reliability is affected by cultural value priorities during the interaction (Ueltschy et al., 2007). There is however lack of research regarding how IC change and accordingly affect the behaviour in the context of service reliability and CS in multicultural retail environment.

Customer Satisfaction

Customer satisfaction is one of the most examined topics in service marketing literature. Particularly, a review from these studies, interrelationship among service evaluation, loyalty and other related topics with culture have become competitive power for the intercultural retailers (Vesel and Zabkar, 2010). For instance, CS has been found to reduce costs for attracting new customers and dealing with poor quality, defects and complaints (Michel et al., 2009). Reflecting these benefits, CS has been found to improve the long-term financial performance of firms (Williams and Naumann, 2011), have a positive impact on loyalty (Ahmad et al., 2014), be applicable predictor for purchase intention (Kuo et al., 2009), increase firm profitability (Williams and Naumann, 2011), enhances firms’ market value (Ahmad et al., 2012; Kanning and Bergmann, 2009) and relationship with culture (Padma et al., 2010; Chan and Wan, 2008). Both conceptual and managerial thinking can benefit from this concentration. From former viewpoint, this study more precisely articulates these linkages and assumes that IC with R can affect the CS, specifically buying-experience of customers in multicultural atmosphere.

Interrelationship among Intercultural Communication Competence, “Reliability” and Customer Satisfaction

The role of services in world economy has increased remarkably within past decades, particularly among emerging economies. During the period of development, services

have replaced goods and probability of choosing among various suppliers gives customers greater power (Kim et al., 2010). Retail service providers must create innovative, competitive and stable marketing orientation in multicultural emerging economies, due to the complicated customers' attitudes and enlarged market share in new markets instead of saturated markets (Hutchinson et al., 2009; Ueltschy et al., 2007). Therefore, driven by recent growth pace of internationalisation of retailers, number of studies have examined and researched varying perceptions of SQ (Paswan and Ganesh, 2005), CS (Kuo et al., 2009; Reimann et al., 2008), purchase intention (Souiden and Pons, 2009; Teng and Laroche, 2007), loyalty (Omar and Musa, 2011), ISEs (Kong and Jogaratman, 2007; Sizoo et al., 2005) and related topics in unanimously context of culture.

The rationale of these studies in various areas within context of intercultural marketing is analysing and improving applicable strategies for the retailers in the multicultural society (Chan and Wan, 2008). Cognitive deductions of several implementations in practical and/or theoretical fields of these studies have proposed that intercultural topics are becoming a significant construct in service marketing literature, specifically in emerging economies (Ihtiyar et al., 2014; Ahmad et al., 2014; Wang and Mattila, 2011; Souiden and Pons, 2009). Although service marketing literature that investigated impact of culture on CS, interrelationship among a construct of SQ, CS and IC has conventionally received relatively little examine consideration (Mueller and Lockshin, 2008). Moreover, when cultures or countries differ in behaviour, culture may be integrated into theoretical and empirical research of diffusion models so that it can be evidenced that different cultural settings create highly conspicuous differences in customer behaviour (Shekarchizadeh et al., 2011). In terms of these perspectives, present study conducts a research to relate intercultural communication competence, service reliability and its impact on customer satisfaction. Thus, following hypothesis are developed:

Hypothesis 1. Service reliability is significantly and positively related to customer satisfaction.

Hypothesis 2. Intercultural communication competence is significantly and positively related to service reliability.

Hypothesis 3. Intercultural communication competence is significantly and positively related to customer satisfaction.

Grocery Retail Industry of Malaysia

According to the last census in 2010 (Statistics Department of Malaysia, 2010), Malaysia's population was 28.3 million, and Malaysia was the 17th crowded country throughout Asia and the 42nd most crowded country in the World. Over 60 per cent of population is regarded as middle-income customers, and poverty has virtually been eliminated. Over 70 per cent of population now lives in urban areas (Cottrell, 2010). These figures might be a deductive and explicable reason for investing in food retail industry of Malaysia by global players (Moklish et al., 2009). However, the market has not been identified as "*easy in or easy out*". Malaysia's grocery retail industry has highly dynamic and competitive market structure.

Furthermore, well-know global players such as Carrefour (26 Branches-cooperated with Aeon), AEON-JUSCO (19) and Tesco (45), have been challenging domestic brands such as Mydin (94) and Giant (147) etc. and they have been creating new strategies for increasing their market share against the domestics retailers in the market. According to (PWC, 2011), turnover of the sector has increased up to \$54 billion dollars in 2010, from \$48 billion in 2009. Furthermore, expected growth rate between 2010 and 2012 is between 5 per cent and 6 per cent, respectively. As in world, growth rate of retail industry in Malaysia will be represented an increase in coming years, and annual expected growth rate of the industry is 3.7 per cent and 3.8 per cent per annual in 2013-2014, respectively (PWC, 2011).

Methodology

The study examines the impact of intercultural communication competence on reliability and customer satisfaction in grocery retail outlets in Klang Valley, Malaysia. Empirical study was using self-administered questionnaires for collecting data from Malaysian respondents. From population, among the sample for the study was selected on convenience sampling (Huddleston et al., 2009). Several reminders were sent at monthly intervals to potential respondents, in order to improve the response rate. Only 227 usable feedbacks were received by before the deadline and about eight of returned surveys were not appropriate for further analysis. This represented about 73.24 per cent of total 299 invitations, which were sent by e-mail.

Likert-type scale was applied in previous studies to the questionnaire design, running from 1 (very low) to 7 (very high) (Qin and Prybutok, 2009). Before distribution of the questionnaire, a pilot test was performed for normality check, readability,

accuracy, comprehensiveness and further item purifications appropriately. Based on pre-test feedbacks, few items were reworded for a comfortable length of time reading and answering the survey. The Cronbach's α coefficient was used to determine the questionnaire service reliability, due to the items that were used to form a scale (Likert scale), construction at the group level and service reliability of each item at the individual level has to be evaluated. An exceeding 0.9 indicates high service reliability, α between 0.9 and 0.7 indicates acceptable level of service reliability, and α below 0.35 indicates low service reliability.

Results

Characteristics of the participants are as summarised in table 3; 72.7 per cent of participants were male. In terms of income, 46.3 per cent of them had a monthly income of more than \$ 1,000, 75.1 per cent had a monthly income less than \$1,333, and 75.3 per cent had a monthly income of less than \$1,334. In terms of education, 90.4 per cent of them had a degree, 8.2 per cent of them had a diploma, and 1.30 per cent had a high school education. More than 58 per cent of them are Malay, 5.90 per cent of participants are Chinese, 7.3 per cent are Indian, and percentage of others was five. The participant who were represented 78.5 per cent of them purchase maximum five times in a month, and more than 41 per cent of them are paying between \$34-\$66 for purchasing at one time.

Table 2. Demographic Indicators

Gender	Age	Education	Ethnicity	Income	Purchasing Amount at One Time	Frequency of Purchasing
Male (72.7%)	20-24 (16.9 %)	High School (1.4 %)	Malay (58.9 %)	<RM 1999 (11.0 %)	<RM 99 (29.7 %)	0-5 (78.5 %)
Female (27.3%)	25-29 (46.1 %)	Diploma (8.2 %)	Chinese (5.9 %)	RM 100-RM 199 (41.1 %)	6-9 (16.5 %)	
			Indian (7.3 %)	RM 200-RM 299 (20.1 %)	10-14 (3.2 %)	
	30-34 (19.2 %)	Degree (90.4 %)	Middle East (5.5 %)	RM 300< (9.1 %)	15< (1.8 %)	

	35-39 (11.4 %)		Europe (17.45 %)	RM 3000- RM 3999 (21.9 %)		
	40-44 (3.2 %)		Others (5 %)	RM 4000< (24.7%)		
	45 and above (3.2 %)					

Author's own work

The theory assessment of SEM analysis for the model is based on revised number of items, as in table 3, after removing those with weak factor loading scores from confirmatory factor analysis (CFA).

Table 3. Items and its Sources.

Questions	Sources
Service Reliability	
(R1) Performs the service right the first time. (R2) Providing services on time that it is promising to do so. (R3) Availability of merchandise. (R4) Error-free sales transaction and record.	Dabholkar et al. (1996)
Consumer Satisfaction	
(CS1) This store has good quality merchandise. (CS2) This store offers products with excellent features. (CS3) This store has the right merchandise selection. (CS4) This store provides a good value for money.	Huddleston et al. (2009); Moliner et al. (2007); Pappua and Questerb (2006)
Intercultural Communication Competence	
(IC1) I am comfortable to staff who is of different ethnicity than mine. (IC2) I think the store is well associated and adapted to local culture.	Sharma, et al. (2012) Briones et al. (2009) Dodd (1998)

(IC3) I usually handle culture transitions very well. (IC4) The store staffs behave accordingly within their expected role.	
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The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, Bartlett's test of Sphericity and Cronbach α test for reliability are conducted and represented in table 4.

Table 4. Factor Analysis and Cronbach α

Constructs	Bartlett's Test			KMO	Cronbach α
Service Reliability	$\chi^2= 386,906$	df=6	Sig.<0.001	0.776	0.839
Customer Satisfaction	$\chi^2=424,800$	df=6	Sig.<0.001	0.825	0.871
Intercultural communication	$\chi^2=263,229$	df=6	Sig.<0.001	0.787	0.748
Overall					0.887

Table 5 indicates the standardised loadings scores of each variable of the latent constructs and good fit indices for CFA analysis, to warrant the appropriateness to proceed with structural measurement. Comparative Fit Index (CFI) of 0.971 and Tucker Lewis Index (TLI) of 0.962 reveal good fit of incremental index for this analysis, while Root Mean Square Error of Approximation (RMSEA) of 0.056 represents satisfactory absolute fit index.

Table 5. Regression Weights and Other Statistics

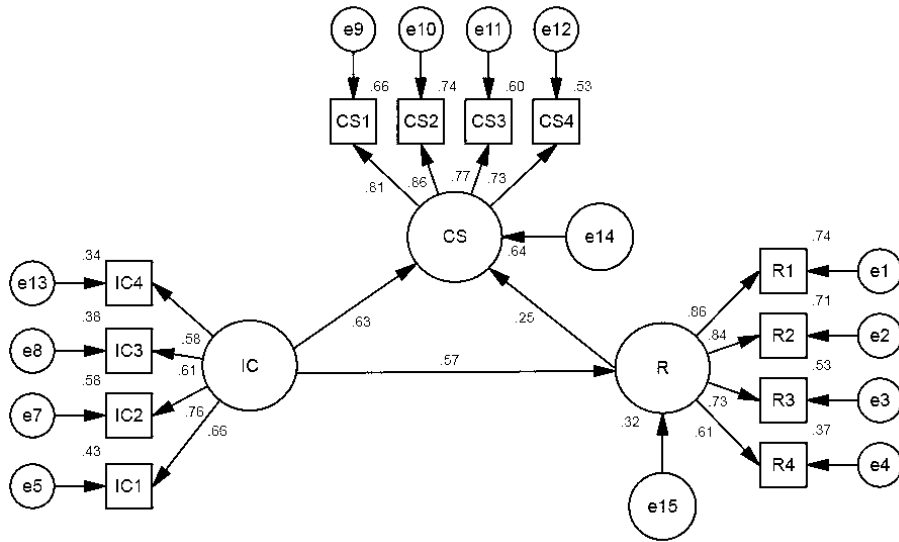
Items		Estimate	S.E.	C.R.	P
R	<--- IC	0.729	0.116	6.296	***
CS	<--- R	0.220	0.071	4.122	***
CS	<--- IC	0.725	0.117	6.188	***
R1	<--- R	1.000			
R2	<--- R	0.987	0.069	14.247	***
R3	<--- R	0.881	0.074	11.861	***
R4	<--- R	0.873	0.092	9.453	***
IC1	<--- IC	1.000			
IC2	<--- IC	1.109	0.128	8.689	***
IC3	<--- IC	0.908	0.122	7.444	***
CS1	<--- CS	1.000			
CS2	<--- CS	1.032	0.073	14.047	***
CS3	<--- CS	0.940	0.076	12.385	***
CS4	<--- CS	0.873	0.076	11.456	***
IC4	<--- IC	0.968	0.136	7.119	***
Chi Square= 86.256 df=51 p=0.001 CFI=0.971 TLI=0.962 RMSEA=0.056					

Structural Equation Modelling

According to Hair et al. (2010), the fit analysis must include one incremental index and one absolute index in addition to chi-square χ^2 value and the associated freedom degree. Figure 1 indicates the fitted research model that represents acceptable goodness-of-fit indices, estimates of standardised parameters and significant values.

As indicated in the model, chi-square χ^2 is significant with ratio of χ^2 / df . The TLI incremental fit index, the CFI goodness of fit index and RMSEA absolute fit index also performed perfectly for structural model.

Figure 1. Structural Equation Model on Intercultural Communication Competence, Customer Satisfaction and Reliability



The path coefficients in table 5 represent that intercultural communication competence has statistically a significant relationship with service reliability and customer satisfaction. Service reliability also remarkably affects customer satisfaction, while intercultural communication competence has significant relationship with customer satisfaction; therefore, H1, H2, and H3, were accepted. In this study, H1 where R was a positive determinant of CS with standardized coefficients as 0.246, meaning that when R goes up by one standard deviation, CS up by 0.246 standard deviations. For H2 IC was a positive determinant of R with coefficient is 0.569. The least significant path is at H3 where IC was a positive determinant of CS with a coefficient of 0.632.

Table 6. Standardized Regression Weight Estimates

Description	Estimate
IC → R	0.569
IC → CS	0.632
R → CS	0.246

Conclusion

The fundamental objective of this study is to present and examine relationships of theoretical model among intercultural communication competence, service reliability, and customer satisfaction. The integrated framework presented in the study postulated that intercultural communication competence effects on customer satisfaction directly. The model also assumed that intercultural communication competence has positive relationship with customer satisfaction and service reliability. According to results, represented relationships were provided in.

Several studies have considered significance of cultural issues in service marketing context (Sharma et al., 2012; Baker et al., 2009; Reimann et al., 2008; Kong and Jogaratman, 2007). However, empirical examinations on role of intercultural communication competence in customers' evaluations of service experiences remain limited in service marketing literature. This study has concentrated in sufficiency by proposing and testing a theoretical model of interrelationships among service reliability, customer satisfaction, and intercultural communication competence. Future studies could advance the knowledge regarding other dimensions of service quality by testing and refining the proposed model in other service settings. Furthermore, examining other dimensions may assist and encourage the model generalizability.

The findings of the present study have several implications for forthcoming investigation in theoretical and managerial fields. First, as noted above, future studies could test both the direct and indirect influences of intercultural communication competence on service reliability and customer satisfaction in different service settings or industries. Second, it is apparent that the role of intercultural communication competence in service experience may create great interest to researchers and practitioners. Third, results of present study suggest that other dimensions of perceived service quality may be included in future studies, in terms of managerial and theoretical implications. The major managerial implication from present study is that, evaluations of service experience may include reference to intercultural communication competence of service experience in addition to the traditional cognitive evaluation (that is, "perceived service quality"). Majority of grocery retailers ask customers for cognitive feedback on a variety of service dimensions without recording positive and/or negative feelings that customers have experienced during their shopping in the store. Second, as practitioners are well aware, employees play a significant role in determining delivery of services during

interaction with their customers. Practitioners may improve level of education and sequence of training activities for their staff particularly frontline staff, such as cashiers, sales persons, to ensure that their staffs are completely and precisely aware of importance of monitoring and managing interaction properly in all service encounters. The study is also providing comprehensive outcomes for re-assessment of service quality with culture as a dimension in Malaysian retail industry.

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A Review of Service and E-Service Quality Measurements: Previous Literature and Extension

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Abstract: *The purpose of this study is to show the requirement of industry-specific national service quality indices for measuring quality in both traditional and electronic services in various industries in a country. In this study, the literature about service and e-service quality measurements was reviewed, and a three-dimensional framework was developed. It was found out that the dimensions of each service quality measurement were all different from each other due to the different characteristics of the industries that each study has been conducted in. The study showed that there is a need for an industry-specific national service quality index and suggested that national customer satisfaction indices which have existed in the literature can be a model for industry-specific national service quality indices. An industry-specific national service quality index enables national companies to understand their unique industrial characteristics that needed to be improved continuously in order to increase service quality and gain competitive advantage. The index which was proposed to develop in the future was suggested for the first time in this study.*

Keywords: *Service Quality; E-Service Quality; Service Quality Dimensions; National Customer Satisfaction Indices; Turkish Customer Satisfaction Index (TCSI).*

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Introduction

The techniques of measuring service quality have become a major area in the marketing literature during the past few decades since the increasing importance of service industry. The share of service industry in the economy has been increasing for years. The importance of services has been growing rapidly since the services account for more than 60 percent of GDP worldwide, almost all economies have a substantial service sector, and most new job is derived by services (Lovelock and Wirtz, 2011). Increasing competition in the service industry has led many companies to consider service quality as a strategic tool. As well as service quality, e-service quality has been becoming more important nowadays. Measuring e-service quality was highly developed after 2000s with the increasing usage amount of e-services. The researches about measuring and improving e-service quality have been continuing sharply.

Service quality affects customer satisfaction and loyalty which have strong influences on customer behavior. Since service quality is one of the antecedents of customer satisfaction (Parasuraman et al., 1988; Boulding et al., 1993; Cronin and Taylor, 1992; Athanassopoulos, 2000) and there are many relations among service quality, satisfaction, loyalty, perceived value, and behavioral intentions (Leonard and Sasser, 1982; Cronin and Taylor, 1992; Chang and Chen, 1998; Gummesson, 1998; Silvestro and Cross, 2000; Cabuk et al., 2013), the measurement of service quality has been a valuable concept that should be analyzed. E-service quality has also positive impacts on customer satisfaction (Chang and Wang, 2008; Barutcu, 2010; Liang, 2012). It was shown that e-service quality has a positive effect on satisfaction and satisfaction has a positive effect on loyalty (Chang et al., 2009). E-service quality has a significant and positive effect on perceived value; and perceived value increases the loyalty (Fuentes-Blasco et al., 2010; Pearson et al., 2012). Pearson et al. (2012) also showed that loyalty intentions can be affected by perceived e-service quality.

There have been many studies that developed scales and dimensions for measuring service and e-service quality in the literature. This paper reviewed the service and e-service quality measurements and showed the need of an industry-specific national service quality index for each various service industry in a country. The aim of the study is to show the requirement of developing industry-specific national service quality indices. In this study, firstly service and e-service quality scales and their dimensions were examined, criticisms about service and e-service quality scales were analyzed, and a three-dimensional framework was developed according to the

literature review. This framework showed that each service quality dimensions were all different from each other due to the different characteristics of the industries that each study has been conducted in. It was highly suggested that there is a need for an industry-specific national service quality index and customer satisfaction indices which have existed in the literature can be a model for industry-specific national service quality indices. National customer satisfaction indices from different countries were explained and Turkish Customer Satisfaction Index was focused on. In conclusion, it was highly recommended to develop an industry-specific national service quality index since it enables national companies to understand the unique industrial characteristics that needed to be improved continuously in order to increase service quality and gain competitive advantage.

Service Quality (SQ) Measurements

Service quality concept was defined by seven service attributes such as *security, consistency, attitude, completeness, condition, availability, and training of service providers* (Sasser et al., 1978). Lehtinen and Lehtinen (1982) defined three dimensions of service quality such as *physical quality, interactive quality, and corporate quality*. Physical quality refers to tangible appearance of the service; interactive quality relates to the interactions between customers and service personnel; corporate quality involves the image of service provider.

The first model for measuring service quality was developed by Grönroos in 1984 (Dotchin and Oakland, 1994; Seth et al., 2005; Bulbul and Demirer, 2008). He developed a service quality model and measured perceived service quality. *Technical quality, functional quality, and corporate image* were used in the model as the dimensions of service quality. Technical quality is about customer evaluations about the service delivered. Functional quality is seen to be more important dimension than technical quality. It refers how consumers take the service and it is the important variable for consumer perceptions and service differentiation. Technical quality is interested in what was delivered such as the knowledge about product and services whereas functional quality is interested in how the service was delivered such as the importance of the service personnel manners. Corporate image has a positive impact on customer perceptions.

Parasuraman et al. (1985) analyzed the dimensions of service quality and constituted a GAP model that provides an important framework for defining and measuring service quality (Saat, 1999). They conducted an exploratory investigation and

developed the GAP Service Quality Model. It shows the key insights gained through the executive interviews and focus group interviews about the service quality concept. The gaps revealed by the executive interviews are shown in the marketer side (GAP1, GAP2, GAP3, GAP4), and the GAP 5 which was formed by the focus group interviews is in the consumer side of the model. The GAP names were shown below (Parasuraman et al., 1985; Lovelock, 2011): The Knowledge Gap (GAP 1): Customer expectation-management perceptions gap; The Policy Gap (GAP 2): Management perception-service quality specifications gap; The Delivery Gap (GAP 3): Service quality specifications-service delivery gap; The Communications Gap (GAP 4): Service delivery-external communications gap; The Service Quality Gap (GAP 5): Expected service-perceived service gap. Lovelock (1994) added the sixth gap to the model as The Perceptions Gap between Service Delivery and Perceived Service.

After the gaps modeling, ten determinants of service quality that consumers used when interpreting the quality were described (Parasuraman et al., 1985) as follows: *Reliability* involves consistency of performance and dependability and provides right service in right time. *Responsiveness* includes the willingness or readiness of employees to provide service. *Competence* shows skill and knowledge the service personnel. *Access* means accessibility and ease of contact. *Courtesy* involves politeness and friendliness of service personnel. *Communication* keeps customer informed, for example explaining the service and its cost. *Credibility* contains trustworthiness and honesty. *Security* involves physical safety and financial security. *Understanding/Knowing the Customer* means learning the customer's specific requirements and providing them individualized service. *Tangibles* show the physical evidence of the service.

Service quality has been conceptualized with different numbers of dimensions and generally it has been explained with two or three dimensional models. Rust and Oliver (1994) proposed a three dimensional model which was not tested in a conceptual way. In this model service quality is a function of *service product*, *service delivery*, and *service environment*. Hedvall and Paltschik (1991) identified service quality dimensions as *willingness and ability to serve*, and *physical and psychological access*. Haywood-Farmer (1988) discussed a service quality model including three basic attributes such as *physical facilities*, *people behavior and conviviality*, and *professional judgment*. These attributes were related to Parasuraman et al.'s (1985) service quality determinants. Physical facilities are related to Tangibles; People Behaviour and Conviviality are related to Reliability, Responsiveness, Access,

Courtesy, Communications determinants; and Professional Judgment is related to Competence, Credibility, Security, Understanding the consumer determinants.

Parasuraman et al. (1988) developed SERVQUAL scale which is an advanced model for measuring service quality. In SERVQUAL model, there are five dimensions and 22 items presented in seven-point Likert scale. They measured service quality especially functional service quality via empirical studies in banking, credit card, repair and maintenance, and long-distance telephone services. The five dimensions of SERVQUAL are: *tangibles*, *reliability*, *responsiveness*, *assurance*, and *empathy*.

Service quality can be measured by a performance-based SERVPERF scale as well as the gap-based SERVQUAL scale (Cronin and Taylor, 1992). SERVPERF scale was developed from the same items in SERVQUAL but it has also the performance statements. Scale consists of items about *expectation* (22 items-same as SERVQUAL), *performance* (22 items-same as SERVQUAL), *importance* (22 items-same as SERVQUAL), *future purchase behavior* (1 item), *overall quality* (1 item), and *satisfaction* (1 item). This study has shown that service quality is measured as an attitude, the marketing literature supports the performance-based measures, and the SERVPERF explains more of the variation in service quality than SERVQUAL. SERVPERF which is a performance-only model for measuring service quality was developed via empirical studies in the sectors of banking, pest control, dry cleaning, and fast food. SERVQUAL had a good fit in banking and fast food sectors whereas SERVPERF had an excellent fit in all four industries.

Dabholkar et al. (1996) developed and empirically validated the multilevel model called Retail Service Quality Scale (RSQS) in order to measure retail service quality that consists of five dimensions such as *physical aspects*, *reliability*, *personal interaction*, *problem solving*, and *policy*. The scale has been viewing as a generalized scale to measure the service quality in retail stores such as department and specialty stores.

Philip and Hazlett (1997) proposed a hierarchical structure model called P-C-P for measuring service quality in service organizations. The model is based on *pivotal*, *core*, and *peripheral attributes*. Pivotal attributes which are the most important attributes that affect service quality are seen as end product or output whereas core and peripheral attributes are seen as inputs and processes. These attributes are shown in a triangle. Pivotal attributes are at the top, core attributes are at the second stage, and peripheral attributes are at the bottom side of the triangle. The degree of importance decreases from top to bottom of triangle.

Brady and Cronin (2001) developed a model for measuring service quality. According to this model; service quality is affected by personal interaction quality, physical service environment quality, and outcome quality. Attitude, behavior, expertise form interaction quality; ambient conditions, design, social factors constitute physical environment quality; and waiting time, tangibles, valence form outcome quality. Martinez Caro and Martinez Garcia (2007) used this model in their empirical research for measuring perceived service quality in urgent transport service industry. They claimed that Brady and Cronin (2001) developed this hierarchical conceptualized and multidimensional model by combining the Rust and Oliver model (1994) and Dabholkar et al.'s RSQS hierarchical model (1996).

E-Service Quality (e-SQ) Measurements

E-services are distinguished from traditional services in terms of their characteristics such as the cost structure of services, the high degree of outsourcing, the rapid development of new services, the availability of transparent service feedback, and the continuous improvement of services (Riedl et al., 2009). Because of these distinguished characteristics between services and e-services, measuring e-service quality is different from measuring traditional service quality. Before developing e-service quality scales, the research have concentrated on determining three points such as technical quality of websites, the factors that influence e-satisfaction, and service quality of websites (Akinici et al., 2009). Hence, the criteria that should be used for designing an effective website have been the focus points of researchers. Abels et al. (1999) determined the six criteria that website designers need to use for designing a successful website: 1) *use* - easy to use, 2) *content* - having useful information, 3) *structure* - displaying of website, 4) *linkage* - providing link to the information at the website and other websites, 5) *search* - providing search button in website itself, 6) *appearance* - being attractive.

Yoo and Donthu (2001) aimed to develop a psychometrically measure of service quality of online shopping websites and developed SITEQUAL. According to the model, there are four important factors that affect web site design such as *ease of use* - of website and ability for information search; *aesthetic design* - the creativity of website in terms of excellent multimedia and colour graphics; *processing speed* - online processing promptness and interactive responsiveness to consumers' requests; and *security* - of financial and personal information.

Loiacono et al. (2002) measured B2C website quality through WebQual™ in the websites that sell products such as CDs, books and services such as hotel reservations and airline reservations. It showed that buying and revisiting intentions of consumers and the value of website. The model has been seen as more suitable for website designers to design better websites for users rather than measuring service quality (Zeithaml et al., 2002). WebQual™ has 36 items and 12 constructs. These constructs are: *Informational fit-to-task*: finds the information that consumers want; *tailored communications*: consumer-website interaction; *trust*: improves security and privacy policies; *response time*: supports communication capacity; *ease of understanding*: designs the pages; *intuitive operations*: develop an intuitive navigation system; *visual appeal*: enhances colors, graphics, and text; *innovativeness*: finds creative approaches; *emotional appeal*: is used to gain online customer experience; *consistent image*: reflects the image of the company; *online completeness*: performs over the website; *relative advantage*: makes the website easier for interacting.

Barnes and Vidgen (2002) developed WebQual 4.0 to assess the perceived service quality of online bookstores such as Amazon, BOL, and IBS in UK and found 3 dimensions and 5 subdimensions for measuring e-service quality of websites. *Usability (Usability and Design as subdimensions)*: appearance, ease of use, ease of navigation; *Information Quality (Information as sub dimension)*: accuracy, format, and relevancy of information; *Service Interaction Quality: (Trust and Empathy as subdimensions)* transaction/information security, product delivery, personalization and communication with website.

Zeithaml et al. (2002) showed that a number of studies have examined some criteria that identified customers' evaluations about website quality. These are information availability and content; ease of use; privacy/security; graphic style; fulfillment/reliability; and other criteria such as access, responsiveness, personalization. They developed e-SERVQUAL in 2002 for measuring e-service quality. This model has been conceptualized in two parts: core e-service quality scale with four dimensions such as *efficiency, reliability, fulfillment, privacy*; and recovery e-service quality scale with three dimensions such as: *responsiveness, compensation, contact*.

Another scale for assessing service quality of e-tailers was developed as PIRQUAL - Perceived Internet Retail Quality Model (Francis and White, 2002). The scale consists of six dimensions such as *web store functionality, product attribute description, ownership conditions, delivery, customer service, and security*.

Wolfenbarger and Gilly (2002) suggested .comQ for the measurement of service quality delivery through websites. They found that *reliability/fulfillment* is the strongest factor that affecting customer satisfaction, *website functionality* is a strong factor that affecting loyalty, and *customer service* is a strong predictive of loyalty and customer satisfaction. They have developed this valid and reliable scale for the measurement of e-tailer quality named eTAilQ (Wolfenbarger and Gilly, 2003). Service quality of e-tailers was measured within four factors such as *website design, fulfillment/reliability, privacy/security, customer service*. These four factors are shown in Table 5 and can be defined as follows: *Website design* includes customer experience elements such as navigation, information search, order processing, and personalization. *Fulfillment/reliability* includes display and description of a product and right delivery of the product on time. *Privacy/security* includes information about customers and credit card payments are secure. *Customer service* includes being helpful and responsive towards customer requests.

Santos (2003) proposed e-service quality dimensions that can be classified in two ways as incubative dimensions and active dimensions. Incubative dimensions developed before website is launched are *ease of use, appearance, linkage, structure and layout, and content*. Active dimensions which can raise customer retention are developed after launching of a website. They are *reliability, efficiency, support, communication, security, and incentive*.

Parasuraman et al. (2005) proposed E-S-QUAL and E-RecS-QUAL scales for measuring e-service quality. E-S-QUAL is a core service quality scale for measuring core service attributes of websites and E-RecS-Qual is an e-recovery service quality scale which measures the quality of recovery services provided by websites. These scales which adapt to psychometric properties are reliable and valid scales. The E-S-QUAL scale has 22 items and four dimensions such as *efficiency, fulfillment, system availability, and privacy*. E-RecS-QUAL contains 11 items in three dimensions: *responsiveness, compensation, and contact*. E-S-QUAL scale is a leading model for the measurement of e-service quality just as SERVQUAL in service quality.

Existing e-service quality scales were seen as goal oriented and utilitarian-based by Bauer et al. (2006). They suggested that utilitarian and hedonic e-service quality dimensions should be integrated; hence they developed eTransQual scale. It is a transaction process based approach to integrate utilitarian and hedonic elements in

measuring e-service quality. This scale has 25 items and five dimensions such as: *functionality/design, enjoyment, process, reliability, and responsiveness.*

E-service quality provided by online travel agencies were investigated by different researchers such as Park et al., 2007; Kaynama and Black, 2000; Shchiglik and Barnes, 2004; Chen and Kao, 2010. According to the study of Park et al. (2007), the dimensions of e-service quality are as follows: *ease of use* that includes functionality and accessibility of website and it is the most important item that affects willingness to buy over the internet, and it is followed by *information/content* that includes up-to-date and reliable information; *responsiveness* that includes solving customer problem quickly and on time; *fulfillment* that includes accuracy of billing, ordering, online transaction, and services promise; *security/privacy* that includes to keep customer personal information, credit card information, and shopping behavior data safe.

The studies explained about measuring e-service quality above were related to B2C companies. Since C2C auction websites have been becoming more important as e-commerce business type (Zhang, 2006), a service quality measurement was needed for C2C auction websites like eBay. Liu et al. (2010) developed a scale called OA-SQ (online auction service quality). It included 24 items and seven dimensions as: *efficiency, system availability, privacy/security, compensation, personalization, playfulness, and reputation.*

Three-Dimensional Framework on SQ and e-SQ Measurements

Parasuraman et al. (1988) claimed that SERVQUAL measures perceived service quality in a wide range of service industries. SERVQUAL also has been widely used in many service industries such as education (Atrek and Bayraktaroglu, 2012; Owlia and Aspinwall, 1996; Okumus and Duygun, 2008), communication via GSM operators (Hotamisli and Eleren, 2011), hotels (Akbaba, 2006; Yaprakli and Saglik, 2010), and transportation (Cati and Yildiz, 2005; Aydin and Yildirim, 2012). The applicability of SERVQUAL to the health care service industry was tested by Babakus and Mangold (1992). According to them; SERVQUAL is a reliable and valid scale for measuring functional service quality in hospitals, however hospital management need to measure both functional and technical quality for a long-term success.

On the contrary, Finn and Lamb (1991) did not support that SERVQUAL is valid for every service industry, thus they suggested that the validity of SERVQUAL in a variety of service industries should be examined industry by industry (Akbaba, 2006). SERVQUAL dimensions may not fit in every industry which needs its own quality dimensions. Ekiz and Bavik (2008) also showed that some researchers who conducted SERVQUAL in different industries confirmed the model (Gabbie and Neill, 1996; Bojanic and Rosen, 1994; Mehta and Durvasula, 1998; Lam and Zhang, 1998) whereas some others did not confirm the model (Carman, 1990; Babakus and Boller, 1992; Brown et al. 1993; Ryan and Cliff, 1996). Carman (1990) suggested that the requirement of the adaptations of items in SERVQUAL for each industry. Babakus and Boller (1992) emphasized the requirement of industry-specific measures of service quality. Brown et al. (1993) found some problems in SERVQUAL and suggested the requirement of a new method to have psychometric properties.

SERVPERF another most known and used scale was tested and found as appropriate for different sectors whereas there were some problems in SERVQUAL. Since the requirement of industry-specific service quality scale (Babakus and Boller, 1992), Karatepe et al. (2005) developed an industry-specific (banking) and a country-specific (Northern Cyprus) model called SQUAL consisting of dimensions as: *service environment, interaction quality, empathy, and reliability*. They measured service quality by using SERVPERF (perceptions-only approach). Besides this, Brady et al. (2002) also performed a replication and extension of SERVPERF, and they supported the results of Cronin and Taylor (1992) in different sectors such as spectator sports, entertainment, health care, long-distance carriers, and fast food. Also, they claimed that SERVPERF is the superior model among all service quality models.

As it was explained above, some industry based scales such as SQUAL were derived by SERVPERF since it was seen as more valid and reliable scale for different service industries. On the contrary, some of the industry-specific service quality scales were based on SERVQUAL dimensions such as RENTQUAL (Ekiz and Bavik, 2008) in car rental services, TISQ (Sangeetha, 2012) in retail banking, SQFS (Chang and Chelladurai, 2003) in fitness services, DINESERV (Stevens et al., 1995) in restaurants, SYSTRA-SQ (Aldlaigan and Buttle, 2002) in retail banking, MS-QUAL (Hosseini et al., 2013) in mobile telecommunication industry, ECOSERV (Khan and Su, 2003) in ecotourism, and INTSERVQUAL (Frost and Kumar, 2000). Even though these scale development studies were concentrated on the specific

industry, they are inadequate with regard to forming a general industry-specific national index that measures service quality.

For assessing quality of e-services, E-S-QUAL as a main scale for measuring e-service quality was adapted to different industries in many studies. It was used in the sectors such as online shopping (Rafiq et al., 2012; Ingle and Connolly, 2006; Meng and Mummalaneni, 2010; Türk et al., 2012), and online banking (Marimon et al., 2012; Akinci et al., 2010). Besides this, there were many researches in the literature about measuring e-service quality in different industries such as internet banking service quality (Jun and Cai, 2001; Yang et al., 2004; Ho and Lin, 2010; Jayawardhena, 2004; Siu and Mou, 2005; Zhu et al., 2002; Wu et al., 2012; Kayabasi et al., 2013); mobile service quality (Ozer et al., 2013; Kuo et al., 2009; Lu et al., 2009); online shopping (Iltter, 2009; Celik and Basaran, 2008; Li et al., 2012; Seethamraju, 2006). Assessing of online service quality was analyzed in different sectors with different scales; however there were no industry-specific national measurements.

After considering the criticisms in the literature about service quality measurements, a three-dimensional framework was developed and shown in Table 1 below. In the first part of this framework, the service quality measurements which contain the main scales such as SERVQUAL and SERVPERF were shown. In the second part, scale development studies deriving from the main service quality scales with the techniques of replication or adaptation were shown. Even though they focused on a specific industry more, they were inadequate of developing an index in national based. In the third part, e-service quality studies which show the general development of e-service quality measurements in different industries and countries were shown.

Table 1: Three-Dimensional Framework on SQ and E-SQ Measurements

SQ Studies	Industry-Country	Dimensions
Parasuraman et al., 1985 GAP Model	Banking, credit card, securities brokerage, repair and maintenance-USA	Reliability, Tangibles, Access, Responsiveness, Competence, Courtesy, Credibility, Security, Communication, Knowing Customers
Parasuraman et al., 1988 SERVQUAL	Banking, credit card, repair and maintenance, telephone-USA	Tangibles, Reliability, Empathy, Responsiveness, Assurance
Cronin and Taylor,	Banking, pest control, dry	Same as SERVQUAL but with

1992 SERVPERF	cleaning, fast food-USA	performance only statements
Dabholkar et al., 1996 RSQS	Department stores-USA	Physical aspects, Reliability, Personal interaction, Problem solving, Policy
Philip and Hazlett, 1997 PCP Model	Particular service organizations-UK	Pivotal, Core, Peripheral attributes
Brady and Cronin, 2001 Service Quality	Amusement parks, restaurants, health and automobile care facilities, hair salons, dry cleaning, jewelry repair, photograph-USA	Personal interaction, Service environment, Outcome
Scale Development Studies in SQ	Industry-Country	Dimensions
Stevens et al., 1995 DINESERV	Restaurants-USA	Reliability, Tangibles, Assurance, Responsiveness, Empathy
Frost and Kumar, 2000 INTSERVQUAL	Airline-Australia	Reliability, Tangibles, Assurance, Responsiveness, Empathy
Aldlaigan and Buttle, 2002 SYSTRA-SQ	Banking-UK	Service system quality, Behavioral service quality, Service transactional accuracy, Machine service quality
Khan and Su, 2003 ECOSERV	Ecotourism-USA	Eco tangibles, Assurance, Reliability, Responsiveness, Empathy, Tangibles
Chang and Chelladurai, 2003 SQFS	Fitness services-USA	Service climate, Management commitment, Programs, Interpersonal interactions, Task interactions, Physical environment, Other clients, Service failures and recovery, Perceived service quality
Karatepe et al., 2005 SQUAL	Banking-Northern Cyprus	Service environment, Interaction quality, Empathy, Reliability
Ekiz and Bavik, 2008 RENTQUAL	Car rental services-Northern Cyprus	Comfort, Delivery, Safety, Handing over, Ergonomics, Accessibility
Sangeetha, 2012 TISQ	Banking-Oman	ATM, Telephone banking, Internet banking, Call center services, Queue systems, Price, Core product

Hosseini et al., 2013 MS-QUAL	Mobile telecommunication- Iran	Network quality, Value-added service, Pricing plans, Employee competency, Billing, Customer services, Service convenience
e-SQ Studies	Industry-Country	Dimensions
Yoo and Donthu, 2001 SITEQUAL	Online shopping websites- USA	Ease of use, Aesthetic design, Processing speed, Security
Loiacono et al., 2002 WebQual™	CDs, books, hotel-airline reservations-USA	Informational fit-to-task, Tailored communications, Trust, Response time, Ease of understanding, Intuitive operations, Visual appeal, Innovativeness, Emotional appeal, Consistent image, Online completeness, Relative advantage
Barnes and Vidgen, 2002 WebQual4.0	Bookstores-UK	Usability, Information quality, Service interaction quality
Zeithaml et al., 2002 e-SERVQUAL	Online shopping websites- USA	Efficiency, Reliability, Fulfillment, Privacy, Responsiveness, Compensation, Contact
Francis and White, 2002 PIRQUAL	Online shopping websites- Australia	Web store functionality, Product attribute description, Ownership conditions, Delivery, Customer service, Security
Wolfenbarger and Gilly, 2003 eTAiQ	Books, CDs and videos-USA	Website design, Fulfillment, Privacy, Customer service
Santos, 2003 E-service quality	Online shopping websites- UK	Ease of use, Appearance, Linkage, Layout, Content, Reliability, Efficiency, Support, Incentive, Communication, Security
Parasuraman et al., 2005 E-S-QUAL	Apparel, books, CDs, computer software& hardware, drugs, electronics, flowers, groceries, toys-USA	Efficiency, Fulfillment, System availability, Privacy
Parasuraman et al., 2005 E-RecS-QUAL	Apparel, books, CDs, computer software& hardware, drugs, electronics,	Responsiveness, Compensation, Contact

	flowers, groceries, toys-USA	
Bauer et al., 2006 eTransQual	Online shopping websites- Germany	Functionality, Enjoyment, Process, Reliability, Responsiveness
Park et al., 2007 Website quality	Online travel agencies (OTA)-USA	Ease of use, Information, Security, Responsiveness, Fulfillment
Liu et al., 2010 OA-SQ	C2C auction websites- Taiwan	Efficiency, System availability, Security, Compensation, Reputation, Personalization, Playfulness.

Source: Author's own work

Following a review of service quality scales, the study proposed a three-dimensional framework. The dimensions of service quality measurements both in traditional and electronic environments can be varied in different industries. As it was shown in Table 1 above, the dimensions of all scales have been changed according to the various industries in which each study was conducted. It was required to add different dimensions to the scales to measure service quality in each industry. Since every service industry has unique characteristics and requires unique dimensions for measuring service quality, there is a requirement for the industry-specific national index in assessing of service and e-service quality in different industries in a country.

The discussion in this research is about the need for industry-specific national indices in measuring both traditional and electronic service quality in different industries and countries. The industry-specific national service quality indices can be developed such as the national customer satisfaction indices which were developed to measure customer satisfaction level in different countries. National customer satisfaction indices from the literature were shown below as a model example for developing the industry-specific national service quality index.

National Customer Satisfaction Indices: A Model Example for the Proposed Index

There has been a requirement for industry-specific national service quality indices due to the unique characteristics of various industries and the different cultural environment of countries. Since service quality is one of the components of customer satisfaction (Ghobadian et al., 1994; McDougall and Levesque, 2000; Demirci Orel et al., 2012; Chu et al., 2012), there are positive relations between service quality and customer satisfaction. Because of these relations, national customer satisfaction

indices which have existed in the literature can be a model for industry-specific national service quality indices. Many different countries have developed their national customer satisfaction indices which help the practitioners to be able to understand their positions in an industry in terms of customer satisfaction.

The most known and used national customer satisfaction indices are such as: the Swedish Customer Satisfaction Barometer-SSCB (Fornell, 1992; Anderson et al., 1994), the American Customer Satisfaction Index-ACSI (Fornell et al., 1996), and the European Customer Satisfaction Index-ECSI which was developed by the EOQ (European Organisation for Quality) and EFQM (European Foundation for Quality Management) and inspired by the SCSB and the ACSI (Kristensen et al., 1999; Sahin, 2009). Except these indices, there have been many other national customer satisfaction indices such as the German Customer Barometer (Meyer and Dornach, 1996), the Danish Customer Satisfaction Index (Martensen et al., 2000), the Norwegian Customer Satisfaction Barometer (Andreassen and Lindestad, 1998), the Pan-European Customer Satisfaction Index (Eklöf and Westlund, 2002), the Jordanian Customer Satisfaction Index (Al-Nasser et al., 2011), the Mexican User Satisfaction Index (Calleros et al., 2012), the Chinese Customer Satisfaction Index (Huang et al., 2011), the Turkish Customer Satisfaction Index (Turkyilmaz and Ozkan, 2007).

The American Customer Satisfaction Index was developed by Fornell et al. in 1996 and measures customer satisfaction level across the United States. The Turkish Customer Satisfaction Index (TCSI) was developed by KA Research Limited (KARL) in cooperation with Turkish Society for Quality under the license agreement with the American Customer Satisfaction Index (KA Research Limited, 2011; Turkyilmaz and Ozkan, 2007; Zaim et al. 2010). The TCSI measures customer satisfaction in various industries of Turkey.

Industrial Annual Measurement Plan is developed in order to measure customer satisfaction level of various companies from different industries in the four quarters of the year. The TCSI Industrial Annual Measurement Plan measures customer satisfaction levels of companies from these industries (Kalder, 2014): 1st quarter: LPG gas distributors, mobile phones, GSM operators, credit cards, fast food restaurants, telecommunication; 2nd quarter: packaged waters, small household appliances, fruit juices, petrol stations, airlines; 3rd quarter: margarine, liquid oil, milk and milk products, canned foods, cleaning products, ice cream, meat and poultry products, personal care; 4th quarter: television as electronic products, white

goods, personal automobiles, health and automobile insurance, food retailer chains, cargo companies, consumer banking. The sectoral based rankings according to the TCSI indices and the industries' most successful companies between the third quarter of 2013 and the second quarter of 2014 were shown in Table 2 below.

Table 2: TCSI Ratios According to the Industries and Leading Companies

2013 3 rd Quarter		2013 4 th Quarter	
Industry	Company	Industry	Company
Margarine:85	Unilever	Television:82	Samsung
Liquid Oil:83	Ana Gıda	White Goods:80	Arçelik
Milk Product:82	Pınar	Personal automobile:78	Volkswagen
Canned food:82	Tat	Insurance:76	Axa insurance
Cleaning Product:82	P&G	Food retailer chain:76	Bim
Ice cream:80	Algida	Cargo company:75	MNG cargo
Meat&poultry:78	Erpilic	Consumer banking:71	Public: Ziraat
Personal care:78	Evyap		Private: İşBankası
2014 1 st Quarter		2014 2 nd Quarter	
Industry	Company	Industry	Company
LPG distributor:82	Aygaz	Packaged water:79	Erikli
Mobile phone:76	Iphone	Small home appliance:79	Beko
GSMoperator:73	Vodafone	Fruit juice:77	Pınar
Credit card:71	Maximum card	Petrol station:77	Opet
Fast food restaurant:71	Domino's Pizza	Airlines:72	Turkish Airlines
Telecommunication:70	Türk Telekom		

Source: compiled from TMME 2013 3rd Q, 2013 4th Q, 2014 1st Q, and 2014 2nd Q.

In the service industry, since services are intangible it is hard to measure quality. The industry-specific national service quality indices should be formed for each industry and country similar to these national customer satisfaction indices. The main difference between national customer satisfaction index and industry-specific national service quality index is that national customer satisfaction index focuses on just one country and it does not have any different dimensions for different industries. It eliminates the diversities among industries. But industry-specific national service quality index should have different dimensions for each unique industry. Otherwise, it would become just national service quality index, not industry-specific national service quality index.

Conclusion

The importance of service quality is already well known (Lewis and Booms, 1983; Grönroos, 1984; Parasuraman et al., 1985; Mangold and Babakus, 1990). In the emerging service industry, it is important to measure the service quality. The first finding of this study was the requirement of an industry-specific service quality index. Since SERVQUAL was not valid for every industry, it was suggested that the validity of SERVQUAL should be examined in a variety of service industries and the adaptations of items in SERVQUAL for each industry should be organized (Finn and Lamb, 1991; Carman, 1990; Babakus and Boller, 1992; Brown et al. 1993; Ryan and Cliff, 1996). Moreover, Babakus and Boller (1992) emphasized the requirement of industry-specific measures of service quality. In order to measure service quality effectively in different industries, an industry-specific service quality index should be developed since every industry has its different unique characteristics. For example, the dimensions that measure the supermarket service quality can be differed from the dimensions of service quality in car washing services or health care services. The measurement of service quality in the retail industry requires different scales since retail stores offer products and significant services together. The Retail Service Quality Scale was developed to measure the service quality in retailers. However, this scale is not sufficient for an industry based index. This scale should be diversified for various retail types such as a scale for department stores and another scale for supermarkets since department stores and supermarkets offer different level of service due to their natures. Because of the differences among the characteristics of each industry, it was highly suggested developing an industry-specific service quality index in this research.

The second finding of this study was the requirement of national service quality index. Service quality can be differentiated in different countries since countries' cultures affect customers' perceptions on quality (Laroche et al., 2004). For example, researchers from different countries (Siu and Cheung, 2001; Nakip et al., 2006; Celik; 2011) have investigated service quality in retailers for years and the results showed that there was significant differences on quality perceptions. Furrer et al. (2000) argued that perceptions of service quality varied across cultural groups and proposed Cultural Service Quality Index by testing SERVQUAL dimensions correlated with Hofstede's cultural dimensions (1980, 1991). Because of these developments that show the importance of cultural differences, it was highly suggested developing a national service quality index in this research.

The main comprehensive result of this study was that a service quality index that consists of both industry-specific and national dimensions should be developed based on every different industry in a country since the unique characteristics of these industries and cultural differences among countries. This review study suggested that there is a general need for developing an industry-specific national service quality index to be able to measure the unique service quality dimensions in each industry. The index which was proposed to develop in the future was suggested for the first time in this study.

Another result was that the national customer satisfaction indices which have existed in the literature have been recommended as a model example for industry-specific national service quality indices. After defining the problem with the help of the literature review, national customer satisfaction indices were proposed as a solution of the problem. Because of the close relations between service quality and customer satisfaction, national customer satisfaction models can be taken as a fundamental basis for developing industry-specific national service quality index. In the case of taking the national customer satisfaction models as a basis for industry-specific national service quality index, it would be helpful to show the relations between the models.

The measurements at the second part of Table 1 called Scale Development Studies in SQ are the most suitable examples for industry-specific national service quality index since they focused on a specific industry in a country such as car rental services (RENTQUAL) in Northern Cyprus, restaurant services (DINESERV) in USA, and fitness center services (SQFS) in USA. However these measurements focused on a specific industry in a country, they were inadequate in forming an industry-specific national service quality index. They need to be improved in terms of creating industry-specific national service quality index.

Developing an industry-specific national service quality index helps service companies to find their unique industrial characteristics that should be improved continuously in order to increase the service quality and serve the customers better. E-service quality is an essential strategy for online retailers, and more important than low price and web presence (Zeithaml et al., 2002). In order to develop e-service quality, industry-specific national e-service quality index should be created. Discovering the main dimensions that increase the service quality of online companies enables them to gain competitive advantage in forming the websites and offerings.

Limitation and Further Research Directions

The limitation of the study was that the only limited numbers of studies (6 service quality measurement studies, 9 replication or adaptation studies in service quality, and 12 e-service quality measurement studies) from the literature could be reviewed and grouped into three dimensions. Three-dimensional framework that analyzed the service quality measurement studies into three groups according to industry, country, and dimensions should be improved in further studies. Moreover, the empirical studies on industry-specific national service quality index need to be implemented in future researches. The dimensions of each service industry should be classified and tested in terms of reliability and validity.

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Price Related Constructs' Effects on Daily Deal Buying Behavior in Turkeyⁱ

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Abstract: *Daily deal sites have become so popular in Turkey just as they have in many other countries. Heavy discounted offers for products or services attract most of the people to these new marketplaces. Glancing over the offers before starting to work became a habit for some of the people. However, some others do not have any interest to daily deals. So, it can be said that behavioral differences are unavoidable among customers. There are different forces that initiate the buying process. In this study, factors that affect buying behaviors of people from daily deal sites are investigated. The effect of buying behavior on satisfaction is also examined. Price related constructs (price consciousness, price mavenism, sale proneness and coupon proneness) and impulse buying tendencies of customers are taken as predictors of buying behavior from daily deal sites. Results suggest that price mavenism and coupon proneness are positively related with buying behaviors from online daily deal sites. On the other hand satisfaction come about to be a positive result of buying behavior. Even though the focus of this study is specific to a limited group, it is envisaged that the results will provide insights for both academics and e-tailers.*

Keywords: *Daily Deal Sites; Online Shopping; Turkey; Structural Equation Modeling.*

JEL Classification: *M31, M10*

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Introduction

The rapid change in information and communication technologies today made consumers begin to spend much more time on the Internet. Hence, the number of the consumers' online shopping activities is increasing day by day. According to the Interbank Card Center (BKM) data, e-commerce in Turkey has grown 14% in 2013 compared to the same period in 2012 (BKM, 2013). On the other side, this Internet revolution has also forced organizations to adapt their marketing, sales, and distribution and promotion efforts to the online environment. For retailers, these platforms represent a new marketing channel to promote their products and services and to attract new customers (Krasnova et al., 2013).

In parallel with the developments in e-commerce, daily deal sites have become the latest Internet enthusiasm, providing discounted offers to customers for various items. Moreover, they have contributed to the transformation of online shopping. This new concept is growing as a subset of online shopping, which has been also named as "private shopping" or "exclusive shopping". It is really like a closed loop at which only members can take the advantage of deep discounts and high-end brands (Baybars and Ustundagli, 2011). Membership is free, but in some cases to become a member to one of the deal sites, a person needs to be invited by another member. Daily deal sites have some advantages, as well as some disadvantages, both for the service providers and the customer. While the service providers get new customers and increase their popularity, in the meantime they can give some damage to their relations with their old customers. On the other side, customers get massive discounts by this way and get to know more places. But, they are sometimes discriminated and mistreated in some places to which they go using the discount coupons (Dang, 2013).

Regardless of the problems that both side face, there are also a number of daily deal websites where users have to sign up to be able to buy products at high discounts in Turkey. In 2008 private shopping began to grow in Turkey. Markafoni was the first website which applied the daily deal model in this country. Trendyol and Limango were the followers in the Turkish online market. After those three firms, the number and variety of daily deal sites had increased continuously (Ekonomist, 2011). Unnado, Vipdukkân, Morhipo, Daybuyday, Markareyon and Perabulvarı were the most known private shopping sites after the first ones. In the beginning, the daily deal sites in Turkey were only accepting consumers that they had invited via an

invitation letter. But, after 2009 most of them had changed their operations and opened their system to all Turkish Internet users (Eticaretmag, 2013a).

Despite the rapid development of the private shopping industry, research in this area appears to be insufficient. Thus, this paper represents an attempt to find out factors affecting consumers' shopping behaviors and their satisfaction from daily deal sites.

Literature review

The usage of coupons and the promotions in purchasing products, are widely studied by academics in the literature, but limited research exists about daily deal sites which is also a new form of price promotion (Kimes and Dholakia, 2011). Several concepts from the promotions literature are relevant to the study of daily deals. Among these, consumers' price consciousness, price mavenism, sale proneness, coupon proneness which are price related constructs and impulse buying tendency are examined in the context of this study.

Price Consciousness

Price consciousness is "*the degree to which the consumer focuses exclusively on paying low prices*" (Lichtenstein et al., 1993, p. 235). Brown et al. (2003) describe price conscious consumers as people who are more concerned with purchasing products and services at the lowest price or trying to get the best possible value for the money they spend. The Internet itself is a very convenient channel for price conscious consumers; as it diminishes the search costs by providing rapid and easy access to information about products and services (Girard et al., 2003). Daily deal sites also provide low price opportunities to customers. Price conscious consumers have a tendency to find cheaper items and reduce their search costs. So, they may be more willing to shop from daily deal sites. Therefore, in this study it is expected that price consciousness has a positive effect on buying behaviors of online consumers.

H₁: Price consciousness is positively associated with buying behavior from online daily deal sites.

Price Mavenism

Some of the consumers may have a desire to be perceived as a "price maven" in their social environment (Lichtenstein et al., 1993). By the definition provided by Yu

(2008, p. 67), price mavenism is explained as “*the degree to which an individual is a source for price information for many kinds of products and places to shop for the lowest prices*”. Price mavenism concept could be accepted as the narrow interpretation of the market mavenism concept (Moore et al., 2003) because, where market mavens are known as market experts, price mavens are only focused on price information in a market. Price mavens are mostly concerned with low price information in the market so that s/he could share this with others. So, in a similar vein with price consciousness, price maven consumers could be more willing to shop from daily deal sites that are mostly popular with low prices. It is expected in this study that price mavenism will have a positive effect on buying behaviors of online consumers.

H₂: Price mavenism is positively associated with buying behavior from online daily deal sites.

Impulse Buying Tendency

According to consumer decision process, consumers pass through numerous stages when they decide to purchase a service or product. After recognizing the need, they begin to search for information, evaluate alternatives and at the end decide to purchase. But, impulse buyers are feeling an urge to buy immediately, so they either pass this stages without thinking or they find themselves at the purchase stage without searching for information and looking for alternatives. On the other hand, this way of behavior is more common in the online environment. Consumers are acting more impulsively while making online purchasing (Verhagen and Dolen, 2011).

From this point of view, one can assume that, when consumers see an offer in a daily deal site they could buy the item without thinking. In a study held by Sharma and Khattri (2013) they found that most of the online daily deals are taking place on impulse. The limited time period for a product in a daily deal site could make consumers more impulsive buyers (Liu et al., 2013). So, the shopping made from daily deal sites may be strongly related to impulse buying tendencies of consumers. This study is also expecting a high relationship between those two constructs.

H₃: Impulse buying tendency is positively associated with buying behavior from online daily deal sites.

Sale Proneness

Being on sale could be sometimes the foremost important reason for a consumer in order to decide to buy a product. Yu (2008, p. 67) defined sale proneness as “*an increased propensity to respond to a purchase offer when the price is presented in a discounted form*”. Lichtenstein, Ridgway and Netemeyer (1993) stated in their study that people perceive sale prices more valuable than an equivalent price that is not presented in sale form. The buying intentions of consumers and being sale prone was found to be positively correlated in the literature (Alford and Biswas, 2002). In this study, it is also expected that sale proneness will have a positive effect on buying behaviors of online consumers.

H₄: Sale proneness is positively associated with buying behavior from online daily deal sites.

Coupon Proneness

Coupons are important promotional tools in some product categories (Swaminathan and Bawa, 2005). They are also being used in daily deal sites in order to attract consumers. When they are offered a discount coupon after entering the website, they become prone to use this coupon. So, consumers who respond to coupon offers are called as “coupon prone” consumers (Lichtenstein et al., 1990). Coupon proneness is a very similar concept with sale proneness and suggests that the perception of the price cue may also be related to the form in which it is presented (Lichtenstein et al., 1993, p. 235). Coupon proneness is consistent with the negative role of price which means that higher prices result in lower purchases (Alford and Biswas, 2002). Lichtenstein et al. (1990) define coupon proneness as “*increased propensity to respond to a purchase offer because the coupon form of the offer positively affects purchase evaluations*”. This study claims that coupon proneness will also have a positive effect on buying behavior.

H₅: Coupon proneness is positively associated with buying behavior from online daily deal sites.

Satisfaction

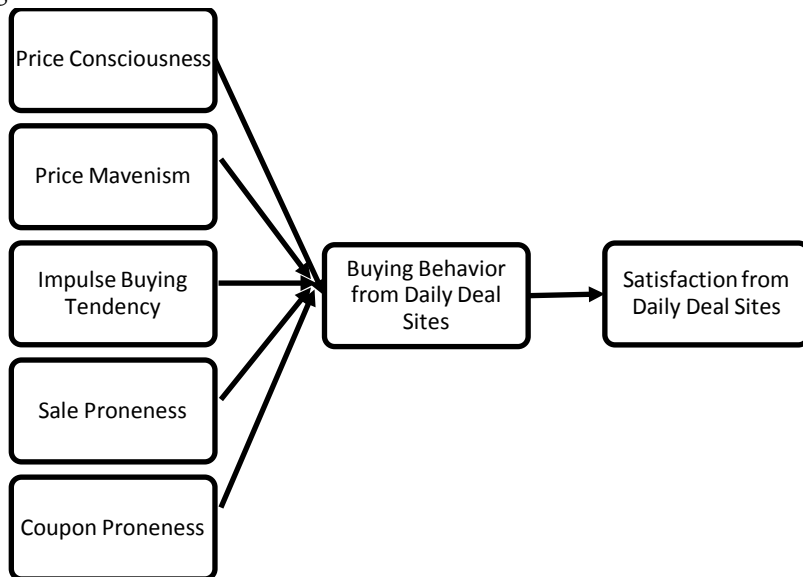
The satisfaction concept has an important position in marketing practice (Ho and Wu, 1999). Satisfaction from a retailer refers to consumers' overall evaluation of the organization, based on their experiences with the organization (Park and Kim, 2003,

p.18). When the consumers are dissatisfied after a purchase behavior, they generally do not want to try the same experience again from the same retailer or e-tailer. So, it can be said that satisfaction is a key component for designing an online retail store (Liu et al., 2008). In order to make customers repeat the purchase behavior e-tailers should try to satisfy them. So, it is expected in this study that buying behavior will have a positive effect on satisfaction.

H₆: Buying behavior is positively associated with satisfaction from online daily deal sites.

Figure 1 shows all of the hypothesized relationships.

Figure 1: Research Model



Research Methodology

Research Objectives

This study attempts to analyze the effects of price related constructs (price consciousness, price mavenism, sale proneness and coupon proneness) and impulse buying tendencies of online consumers on their buying behaviors from daily deal

sites in Turkey. Besides, the effect of buying behavior on satisfaction is also investigated.

Sample

In order to test the research model, an online survey was conducted. The survey was conducted from April 30 to May, 14, 2013. Respondents of the survey were online consumers in Turkey who have bought a service or a product from an online daily deal site in Turkey within the last three months. An e-mail was sent to the people who were thought to shop from online daily deal sites in order to announce the survey. They were also asked to forward the e-mail to whom they think that were also using daily deal sites for shopping. In the e-mail, a link to the address was provided with instructions to start the questionnaire. At the end, the online questionnaire was administered to a set of 245 respondents. Respondents were the existing customers of the Turkish online deal sites.

The demographic characteristics of the survey sample are summarized in Table 1. The sample comprised of 138 (56.3%) women and 107 men (43.7%). The respondents' ages ranged from 18 to over 58 years. Most of the respondents were between the age group of 26-33 (38.4%) and it was followed by the age group of 34-41 (25.3%). High School and lower grade respondents comprised only the 11.4%, university and over grade respondents comprised the 88.6% of the sample.

Table 1: Demographic Characteristics of the Sample

Age	n	%	Education	n	%	Gender	n	%
18-25	60	24.5	Have not completed High School	1	0.4	Female	138	56.3
26-33	94	38.4	High School	27	11.0	Male	107	43.7
34-41	62	25.3	University	138	56.3	Total	245	100.0
42-49	17	6.9	MS/Doctorate	79	32.2			
50- 57	9	3.7	Total	245	100.0			
58+	3	1.2						
Total	245	100.0						

The respondents were also asked to indicate which of the daily deal sites they used more in the last three months. Markafoni had by far the largest share of 24.5%, which was the most preferred site in this study. This outcome was a surprise since Markafoni is the pioneer of this industry in Turkey (Özmen, 2011). Trendyol (20.0%) was the second mostly preferred daily deal site.

Measures

The price related constructs, which are price consciousnesses, price mavenism, sale proneness and coupon proneness, were measured using multiple items, five-point, Likert scales ranging from strongly disagree (1) to strongly agree (5). Similarly impulse buying tendency and satisfaction from online daily deal sites were measured by multiple items. Buying behavior from online daily deal sites were measured by asking the number of purchases made from an online daily deal site in the last three months. For all of the constructs initial scale items were adapted from previously validated measures. The items were adapted from the scales initially developed by Lichtenstein et al. (1993), Dholakia and Kimes (2011), Lichtenstein et al. (1990), and Liu et al. (2008).

Price consciousness was measured by three items; price mavenism and sale proneness were each measured by five items, which were all derived from Lichtenstein et al. (1993). Coupon proneness was measured by four items and was adapted from Dholakia and Kimes (2011) and Lichtenstein et al. (1990). Impulse buying tendency was measured by five items and was adapted from Dholakia and Kimes (2011). Lastly, satisfaction from daily deal sites has four items and which was derived from the study of Liu et al. (2008).

Results

After collecting the data, validities and reliabilities of the scales were analyzed. The validity of the obtained data was tested using confirmatory factor analysis (CFA). CFA is known as a more strict interpretation of dimensionality of the scales (Gerbing and Anderson, 1988). In the initial test, the measurement model needed some revisions. So, the model was consequently refined by eliminating one item that has the largest error variance (Broekhuizen, 2006). After eliminating this item, the test of the final measurement model showed a good fit between the data and the proposed measurement model. One of the goodness of fit index measures is the relative/normed chi-square (χ^2/df). Although there exists still some conflict regarding the acceptable ratio for this statistic, the cutoff point was taken as 3 (Hair et al., 2006). The ratio of the chi square value relative to degrees of freedom for the measurement model was calculated to be 1.663. Besides, comparative fit index (CFI), the goodness of fit index (GFI), the normed fit index (NFI), adjusted goodness of fit index (AGFI), Tucker Lewis Index (TLI) and the root mean square error of approximation (RMSEA) were also taken in order to test the goodness of fit

of the measurement model. For CFI, NFI and GFI the recommended threshold for good fit is 0.90, and this was nearly met for most of the fit indexes (Hair et al., 2006; Kline, 2011; Raykov and Marcoulides, 2006). Also, RMSEA, in which a value less than 0.08 is considered a good fit, was also met (Browne and Cudeck, 1993). The results of CFA for the dataset are given in Table 2.

Table 2: Goodness of Fit Statistics for the Measurement Model

	X ² /sd	GFI	CFI	NFI	AGFI	TLI	RMSEA
Goodness of Fit Measures	1.66	0.879	0.951	0.887	0.844	0,941	0.052
Recommended Levels	< 3.00	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90	< 0.08

In addition to the goodness of fit measures, reliabilities of the constructs were also considered. In order to test the reliabilities of the measures, cronbach's alpha coefficient was used. According to Hair et al. (2006), Cronbach's alpha values should be above 0.70 in order to establish scale reliability. Cronbach's alpha scores assessing internal consistency of all research constructs were above 0.70, indicating good reliabilities of measures.

Structural Model

After testing the validity and reliabilities of the items, the causal relationships between them were tested. This study used structural equation modeling in order to test the hypothesized relationships between the constructs. At first, the fit between the data of this study and the proposed model was analyzed. To assess the model fit, χ^2/df statistic, goodness of fit index (GFI), comparative fit index (CFI), normed fit index (NFI) and the root mean square error of approximation (RMSEA) were used. All of the goodness of fit measures was between the recommended levels, so the model had a good fit.

Table 3: Model Fit for the Structural Model

	X ² /sd	GFI	CFI	NFI	AGFI	TLI	RMSEA
Goodness of Fit Measures	1.58	0.883	0.956	0.891	0.851	0.948	0.049
Recommended Levels	< 3.00	> 0.90	> 0.90	> 0.90	> 0.90	> 0.90	< 0.08

Looking at the results for the model, three of the hypotheses were supported. The positive effect of price mavenism (H₂) and coupon proneness on buying behavior (H₅), and again the positive effect of buying behavior on satisfaction (H₆) were all

supported. However, there was no support for H₁, H₃ and H₄. Table 4 summarizes the standardized path coefficients and t-values.

Table 4: Parameter Estimates for the Structural Model

	Parameter Estimates	t-values	Hypothesis
Price Consciousness→Buying Behavior	0.036	0.465	Not Supported
Price Mavenism→Buying Behavior	0.170	2.335*	Supported
Impulse Buying Tendency→Buying Behavior	0.060	0.817	Not Supported
Sale Proneness→Buying Behavior	-0.129	-1.260	Not Supported
Coupon Proneness→Buying Behavior	0.229	2.515*	Supported
Buying Behavior→Satisfaction	0.260	3.996*	Supported

*p<0.05

As the results indicate, being a price maven and a coupon prone customer was found to be important for deciding to buy from online daily deal sites. Also, if a consumer bought from daily deal sites, this behavior was correlated with his/her satisfaction from those sites. But, price consciousness, sale proneness and impulse buying tendency were the constructs that were not related with buying behaviors from the online daily deal sites in Turkey.

Conclusion

Internet became a popular way for shopping throughout the world. Turkey, in this sense, is still a developing country with its 21.8% online shopping rate (TUIK, 2012). This rate could be interpreted as only one of the five internet consumers uses it for shopping purposes currently. Besides, a new way of online shopping called “private shopping” brought some changes to online shopping. In this new way of shopping “daily deal sites” which are offering many kinds of discounted products to their members, have contributed to the transformation of online shopping experience in Turkey as well (Pelenk et al., 2011).

In this paper, the factors that predict a consumer’s online buying behavior from daily deal sites were attempted to be investigated. Those constructs were price consciousness, price mavenism, impulse buying tendency, sale proneness and coupon proneness. Besides the main objective, the effect of buying behavior on satisfaction

from online daily deal sites was also investigated. Primary data was collected from an online survey of national Internet users.

Results of the study showed that some of the price related factors have significant effects on buying behavior from daily deal sites, while some do not have any effect. The hypothesis which claimed that there is a positive correlation between price mavenism and buying behavior was found to be significant. The shopper's price maven trait is a positive predictor of their daily deal site usage, suggesting that a key motivator for daily deal purchase is being a good source of price information and making suggestions about price issues to friends. Respondents who see themselves as price maven are more prone to buying from daily deal sites. Those type of people mostly follow the discounts. On the other hand, daily deal sites claim to have the best prices. So, it could be said that the objectives of the consumers overlap with the purposes of the daily deal sites.

Coupons have been in use throughout the world for many years to get discounts while buying something. Especially in the US, businesses took notice of the coupons and made millions of consumers use coupons (Horne, 2013). However, this habit is not widespread among Turkish retailers. Nevertheless, in Turkey, with the great success of daily deal sites, most of the people began to use this channel. So, the popularity of discount coupons is on rise. In this study, coupon proneness is found to be a positive predictor of buying behavior. This increases the possibility that consumers use daily deal sites because of the promotions made for the services and products. Similar with this study, Dholakia and Kimes (2011) tried to examine the effects of the six psychological factors of daily deal site use in their study. They found market mavenism and coupon proneness as positive predictors of online daily deal site usage.

Finally, buying behavior has a positive effect on satisfaction from online daily deal sites. This means that when the number of purchases made from daily deal sites increases, the level of satisfaction increases. On the other hand, price consciousness, sale proneness and impulse buying tendency were not found to be predictors of buying behavior from daily deal sites. This suggests that daily deals do not appear to be attractive for price conscious and sale prone consumers to greater degrees. Interestingly, respondents who have tendency for buying impulse are not willing to buy from daily deal sites.

Implications

Why do consumers choose to buy from daily deal sites? Is this because they are impulsive buyers or do they love to hunt for bargains? Does coupon matter for them? Do mostly price conscious buyers choose this way of shopping? The results of the present study give answers to these questions for Turkish online consumers.

There are some interesting findings of this study. At first glance, one can think that the logic behind daily deal sites is the low prices that they offer. This means that, online consumers use this way of shopping, because they think they are paying less compared to other online stores and even physical stores. But, price consciousness and sale proneness were not found to be related with buying behavior from daily deal sites. This could be interpreted as people who are searching for low prices are not always willing to buy from daily deal sites. Turkey is not in introductory stage for this way of shopping. The Turkish daily deal market could be claimed to be in the maturity stage, since in the first years, the market grew so fast and after 2014 this growth began to decline (Eticaretmag, 2013b; Atakan et. al., 2013). The big players mostly survive in the market, but even so there are still numerous daily deal sites and consumers are purchasing from those types of sites. They do not see daily deal sites as outlet stores offering low prices, which was the viewpoint at the beginning, because in some of the daily deal sites (especially in the leading sites such as markafoni.com) some luxury and high-priced brands are being sold. Prices of those products are same with these brands' official web stores. In this case, consumers may choose buying from the daily deal site due to ease of access to luxury brands with limited distribution rather than price advantages. Besides, the inventory levels of the suppliers that are providing the products to daily deal sites began to drop off (Yavuz, 2012). This could be also a reason behind the moderate price levels. At the beginning the inventory level was high and the number of daily deal sites was low. So, they were utilizing from the situation and were offering lower prices to online customers. But later, this advantage disappeared.

On the other hand, the most advantageous feature of online stores is their 7/24 accessibility. Consumers have the chance to buy what they want at the time their need emerges. This feature may increase the number of sudden purchases made from the internet which is directly related to impulse buying tendency. A recently conducted study by Liu et al. (2013) in China emphasized the importance of impulsiveness in online group shopping and recommended online retailers to pay attention to impulse purchases. Also, a study held by Martinez and Kim (2012) in

the US found a positive significant relationship between impulse buying behavior and intention to purchase from a private sales site. But, in our study which is conducted in Turkey, the story is not the same. Consumers having tendency for impulsive buying are not eager to buy from online daily deal sites. The e-tailers of daily deal sites should be aware of their customers, because they are not buying products/services without thinking. Therefore putting effort for attracting impulsive buyers does not seem a good idea for daily deal site retailers. Giving a limited time offer for the consumers in order to make them buy things quickly will not work. For this reason, they could extend the time period they offered to consumers for discounts.

Being price maven and using coupons are the supporting criteria for using daily deal sites. Consumers who are consulted for price information are more eager to buy from daily deal sites. The reason behind this may be because they want to give the impression to others that they follow daily offers. The perception of other people could be important for them. So, getting price information as early as possible is an important criterion for those type of consumers. Daily deal sites e-mail their subscribers every day. The e-tailers of daily deal sites may increase the frequencies of those alerts to consumers who are using their sites more often. Because the possibility of being a price maven for the people using daily deal sites more often could be high.

According to the results of this study, using coupons encourages online consumers to shop from daily deal sites more frequently. Consumers who are prone to use coupons also use daily deal sites more often as compared to others. Coupon usage is normally not so widespread in Turkey for physical stores, but in online shopping, especially for daily deal sites' coupons became popular. People are getting used to coupons. Some of them are sent by e-mail to consumers, some of them are active for one hour when they enter to the website. These coupons motivate online consumers for buying more products/services. E-tailers should consider this effect.

In addition, the research findings of this study do provide some insights for Turkish e-retailers of daily deal sites in designing managerial implications on how to improve their performance in order to increase the level of customer satisfaction. They should consider the effects of those two constructs. Because, they have an effect on buying behaviors of online consumers and buying behavior is directly related to customer satisfaction.

Limitations and Future Research

Even though the research findings provide some new insights to researchers, as of prior studies this study has also some limitations. Firstly, even this study has a diverse sample that covers a wide range of demographic characteristics; the method for this is convenience sampling. The data were obtained from online consumers by e-mailing and asking them to submit to the questionnaire. So, the study could not present the entire Turkish online consumers. More diversified samples would provide more valuable results. Second, this study investigated the effects of price related factors and impulse buying tendency on buying behavior from daily deal sites. Some other constructs may have also any effect on buying behavior. In the future, those factors could be included and the effects may be retested.

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ⁱ This paper is an improved version of the study named “Factors Influencing Buying Behavior on Daily Deal Sites in Turkey” which was partly presented in ICESoS 2013 Conference.

Soap Opera Effect on Product Preferences in Terms of Country Image: A Case of Turkish TV Serials in Albanian Market

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Abstract: TV serials can be leveraged as an effective mass communication means that is capable of sneaking into people's lives, and altering their perceptions, habits and preferences. Today globalization has come to facilitate the way in which consumers are exposed to a myriad of foreign products, and country of origin and image emerge as major hints in assessing these products. Foreign TV programs that become popular in a country are known to contribute to the country of origin image of products involved. This study aims to study the way TV viewers in Albania, where Turkish soap operas are popular, perceive products of Turkish origin and whether Turkish TV programs have any effect on the purchasing decisions of Albanians. To this end, the data set of the study was compiled through one-to-one interviews with 413 participants in three Albanian cities (Tirana, Durrës and Kukës). Quantitative data were analyzed using factor analysis and structural equation modeling (SEM) methods while qualitative data were obtained using the in-depth interviews with the people from the field who hold opinions about the matter at hand. The study produced positive findings that imply that TV serials influence product preferences of consumers.

Keywords: Opera; Country Image; Product Preference; Turkish TV Serials.

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Introduction

Films, TV serials and shows have the potential to influence the audience views and make them adopt certain attitudes in specific issues (Pervan & Martin, 2002; O'Connor et al., 2008; Busby & Klug, 2001; Desai & Basuroy, 2005; Cho, 2007; Hudson & Ritchie, 2006; Kim et al., 2007; Riley et al., 1998). The characters in TV serials may emerge as real life role models for viewers and the places where these serials were shot may turn into popular tourism destinations (Balli et al. 2013, Kim & Long 2012, Busby & Klug, 2001).

Soap operas are seen as one of the successful advertising venues (Pervan & Martin, 2002). They have a significant role in influencing lifestyles, purchasing habits and brand preferences of viewers as well as in boosting the image of the country of origin (Cho, 2007; O'Connor et al., 2008). They are at least capable of increasing the level of awareness of their country of origin (Kim et al., 2007).

The image effect created by films and soap operas do not tend to be short-lived in general. This applies to both positive and negative images. Advantages of the positive country of origin image created by films and soap operas or disadvantages of the negative image so created may last for years (Hudson & Ritchie, 2006). The soap operas that portray a positive country image can boost the country of origin as a popular brand, thereby giving a competitive edge to the products of that country in the international markets and influencing the purchasing preferences of consumers. Turkey started to sell soap operas to foreign countries in 2001. Its exports have increased in recent years and Turkish soap operas have come to enjoy a sizable audience in the Middle East and Balkans. As these shows that secured international followers made positive contributions to the country of origin image (Brljavac, 2011; Türbedar, 2012; Radic, 2011), this also changed the perspective on Turkey (Öktem, 2010).

The first Turkish soap opera was aired in 2011 in Albania, a country located in the Balkans, but it was in 1980 when Albanians first got in touch with Turkish films. "Al Yazmalım" (The Girl with the Red Scarf) is the first Turkish film aired in Albania (Telegraf, 2012). After several films that were aired in those years, Turkish soap operas invaded Albanian TV stations and they quickly became very popular (Agolli, 2012). Despite the fact that both countries enjoyed a common past, little was known about Turkey in Albania, and this has changed thanks to Turkish soap operas (Dumani, 2012). Common past and culture and similarities in family life

between Albania and Turkey were cited as the reason why Turkish soap operas became popular by dethroning their previously popular Latin American counterparts (Tirana Times, 2012). Whether there has been a change in how products of Turkish origin are perceived in Albania in parallel to the image change attributable to the impact of Turkish soap operation was an object of curiosity, and this study aimed to measure the effect of Turkish soap operas on product preferences of Albanian consumers.

Country-of-origin image

The country of origin image (COI) consists of views and beliefs a person may hold about a specific country. Beliefs s/he may hold in his/her mind about that country may have been acquired from different sources and at different times. These beliefs may be real or unreal, but they still can affect that person's attitudes and perceptions concerning the images of the products from that country. Before making a purchasing decision and during the phase of assessing the products, consumers tend to pay attention not only to their internal characteristics such as taste, design, performance and capacity to serve the purpose as well as to their external features such as price, packaging, brand and warranty (Bilkey & Nes 1982; Zain & Yasin, 1997; Agrawal & Kamakura, 1999). While characteristics such as price and brand signify the quality of a product (Rezvanil et al.), the country where that product is produced or the country which is represented by that product, i.e., the perceptions created in the minds of consumers by the country of origin image, may emerge as major hints and criteria for evaluating the products involved (Bilkey & Nes, 1982; Roth & Romeo, 1992; Ayyildiz & Cengiz, 2007; Zamantılı & Durmusoglu, 2008; Roth & Diamantopoulos, 2009; Lampert & Jaffe, 1998). This implies that the success of products in the international markets is determined not only by objective factors such as price and quality, but also subjective factors.

It was Schooler (1965) who first used the term "country of origin" in the marketing literature (Pereira et al., 2005). Since then, a number of studies have been conducted on this topic (Lopez et al., 2011) and this concept has even become one of the most studied themes in the marketing literature (Agrawal & Kamakura 1999; Bloemer et al, 2009). Some literature studies (Al-Sulaiti & Baker, 1998) argued that the term country of origin should enter the literature as the fifth element of the marketing mix in addition to the product itself, its price, promotional activities and distribution channels (Dosen et al., 2007). In time, the term country of origin has come to be perceived as the country of origin image (Pereira et al, 2005). It was Nagashima

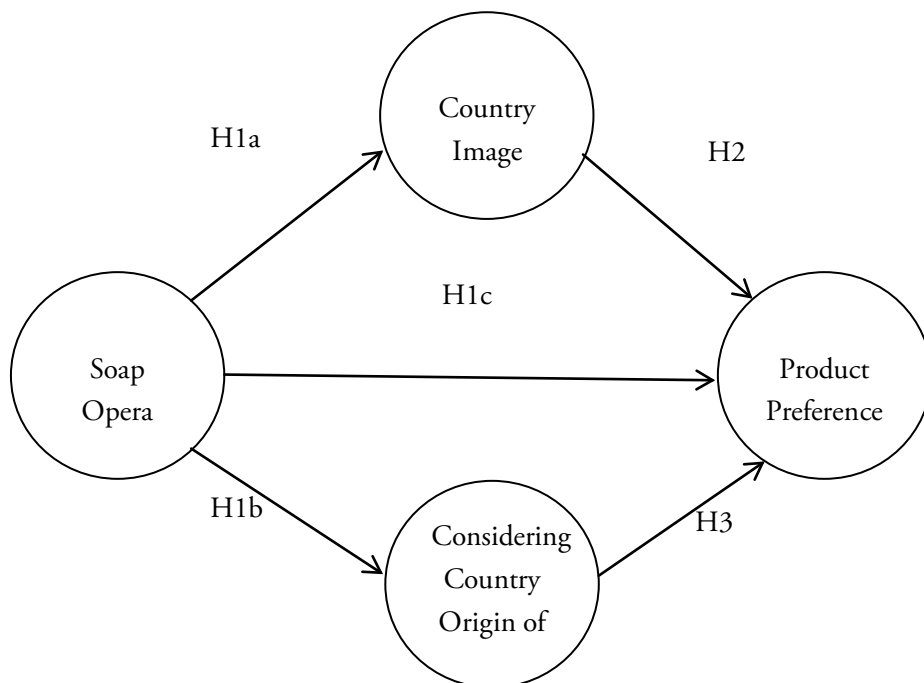
(1970) who was first to make a widely accepted definition of the country of origin image. Nagashima (1970) defined the country of origin image as “the picture, the reputation, the stereotype that businessmen and consumers attach to products of a specific country.” For Nagashima (1970), this image is created by such variables as representative products, national characteristics, economic and political background, history and traditions (Nagashima 1970; Pereira et al, 2005; Rezvanil et al, 2012; Lin & Chen, 2006).

Means of mass communication enjoy a guiding effect in the shaping of the image in the minds of consumers, but personal experiences of consumers and opinion leaders in the society, too, play a role in this process. Given all these aspects, the country of origin image may guide consumers emotionally and behaviorally in the purchase decision process. A number of studies suggest that the country of origin image can make a significant impact on the consumer preferences (Bilkey & Nes, 1982; Agrawal & Sikri, 1996; Kaynak & Kara, 2002; Ozretic Dosen et al., 2007) and the relation between the country of origin image and the purchasing behavior becomes more important in the ongoing global marketing conception.

Given the fact that developed countries enjoy a more positive image compared to the developing countries, we see that products and brands of developed countries tend to be perceived as having higher quality and more reliable (Abedniya & Zaeim, 2011). Numerous studies confirmed such consumer tendencies (Zain & Yasin, 1997). Some studies found that the products whose country of origin is not specified tend to be perceived as more reliable than the products of underdeveloped countries (Acharya & Elliott, 2001; Kaynak et al., 2000). Although the past studies found that consumers tended to perceive domestic products more positively compared to foreign products (Watson & Wright, 1999), the tendency to prefer domestic products over imported products is higher in developed countries (Chryssochoidis et al., 2007). Moreover, some studies suggested that when a choice is to be made between two countries with and without cultural similarity with the own country, consumers tend to prefer the products of the country with the cultural similarity (Crawford & Lamb, 1981; Wang & Lamb, 1983; Watson & Wright, 1999). Likewise, TV serials tend to bring about cultural and social convergence among different societies (Castello, 2010). This lends credence to the argument that increased popularity of Turkish TV serials in Albania will boost Turkey’s country image and foster Albanians’ preferences for Turkish products, given the sheer amount of cultural values historically shared between two countries. In support of this argument, it was observed that the increased popularity of Turkish TV serials in

the Middle East and Balkans led to an increase in Turkey's trade and tourism revenues from the countries located in these regions that imported TV serials from Turkey (Balli et al., 2013). It is widely acknowledged that TV serials tend to increase overall consumption and are an effective advertisement tool (Pervan & Martin, 2001; Miller, 1995). The conceptual model and hypotheses developed in this framework can be listed as follows.

Figure 1: Conceptual Model



H1a: There is a positive correlation between watching TV serials of a specific country and the image of that country.

H1b: There is a positive correlation between watching TV serials of a specific country and noticing the country of origin of products.

H1c: There is a positive correlation between watching TV serials of a specific country and preferring products of that country.

H2: There is a positive correlation between having a good country image and preferring products of that country.

H3: There is a positive correlation between noticing the country of origin of products and preferring specific products.

Research methodology

Quantitative method was employed in this study. The data were obtained from three Albanian cities, namely Tirana (the capital), Durrës (a tourism city) and Kukës. Face-to-face interviewing was adopted as the method of collecting quantitative data. In designing the questionnaire, three local linguists were consulted about the comprehensibility of the questions. A sample run was made with 20 questionnaires to revise certain questions and make additions to and omissions from the final questionnaire. 74 people from Kukës, 112 people from Durrës and 227 people from Tirana participated in the study. The face-to-face interviewing of the participants produced no invalid questionnaire. The questions which were asked to participants during the interview and which sought to measure their attitudes and approaches to identify the impact of Turkish TV serials on consumers in the Albanian markets are given in Table 3 with mean values, standard deviation and factor values. The conceptual model and questions were designed by the researcher in the light of literature (Castello, 2010, Chrysochoidis et. al, 2007, Kaynak et.al, 2000, Kim & Long, 2012) data as the literature review produced no study that measured the direct effect of TV serials on product preferences. 14 variables in the conceptual model were measured using the 5-level Likert item (ranging between “I strongly disagree” and “I strongly agree”). Exploratory factor analysis (EFA) and structural equation modeling (SEM) were used to test the conceptual models and obtain scientific findings.

Analysis and Results

The demographic information relating to participants, including gender, age, marital status, education, occupation and income is given in Table 1.

Table 1: Sample Characteristics

Category		Freq.	%	Category		Freq.	%
Gender	Male	129	31.2	Monthly Individual Income Level	€ 200 or less	117	28.3
	Female	284	68.8		€ 201-350	153	37.0
TOTAL		413	100		€ 351-700	113	27.4
Marital Status	Single	172	41.6		€ 7001-1,500	14	3.4
	Married	76	18.4		€ 1,501 or more	16	3.9
	Married one child	54	13.1		TOTAL		413
	Married two	70	16.9	Education	Less than high school	44	10.7
	Married three	41	9.9		High school	149	36.1
TOTAL		413	100		Bachelor	124	30.0
Age Category	18 or younger	45	10.9		Post Graduated	96	23.2
	19-30	174	42.1	TOTAL		413	100
	31-40	112	27.1	Occupation	Own		
	41-50	60	14.5		Business	35	8.5
	51 or more	22	5.3		Student	47	11.4
	TOTAL		413		100	Worker	105
Occupation	Private Sector	142	34.4		Public	54	13.1
	Public	54	13.1		Officer	30	7.2
	Officer	30	7.2	Other			
	Other			TOTAL		413	100
	TOTAL		413	100	TOTAL		413

15.7% (65 people) of the participants said they do not watch Turkish TV serials regularly. The number and percentages of TV serials regularly watched by participants before and during the studied period are given as follows:

Table 2: Numbers of Watching Turkish TV Serials

Number of TV Serials	Percent (%)	Number of People	Number of TV Serials	Percent	Number of People
1	26.2	108	4	9.4	39
2	22.5	93	5	1.7	7
3	23.7	98	6	0.7	3

Participants were asked whether they prefer Turkish products while shopping, and 69 % (285) gave affirmative answers. 50.8 % (210 people) of the participants noted that Turkish TV serials make a positive effect on their preferences for Turkish products. To better understand the role of TV serials in driving product preferences, the relation between the “number of Turkish TV serials regularly watched” and the “preference for Turkish products” was tested using the chi-square method and a significant relation was found ($p > 0.000$). Thus, while the rate of those who never watch Turkish TV serials regularly was 43.1%, this rate was 68.5% for those who regularly watch at least one TV serial, 78.6% for those who regularly watch three TV serials and 85.7% for those who regularly watch five TV serials and 100% for those who regularly watch six serials.

The exploratory factor analysis (EFA) and structural equation modeling (SEM) were measured using four factors and 19 variables. For the reliability level of variables, Cronbach’s alpha was measured as 0.848. This rate is considered as sufficient and appropriate for the reliability of findings obtained (Kalaycı, 2010). Also the KMO measure of sampling adequacy has been measured as 0.875 and Approx. Chi-Square; 3907.102, df; 171, Sig; 0.000. Variables and mean values and factor loads are given in Table 3.

Table 3: Factor Loads

No	Factors and Sub- Items	Mean Values	Factors Loads
Soap Opera		Factor Variance: 31.64%	
S1	I often follow the Turkish serials	3.47	.880
S2	I like watching Turkish serials	3.63	.871
S3	I intend to follow also other Turkish serials in the future	3.41	.857
S4	Turkish TV serials are among the most favourite programs for me	3.27	.815

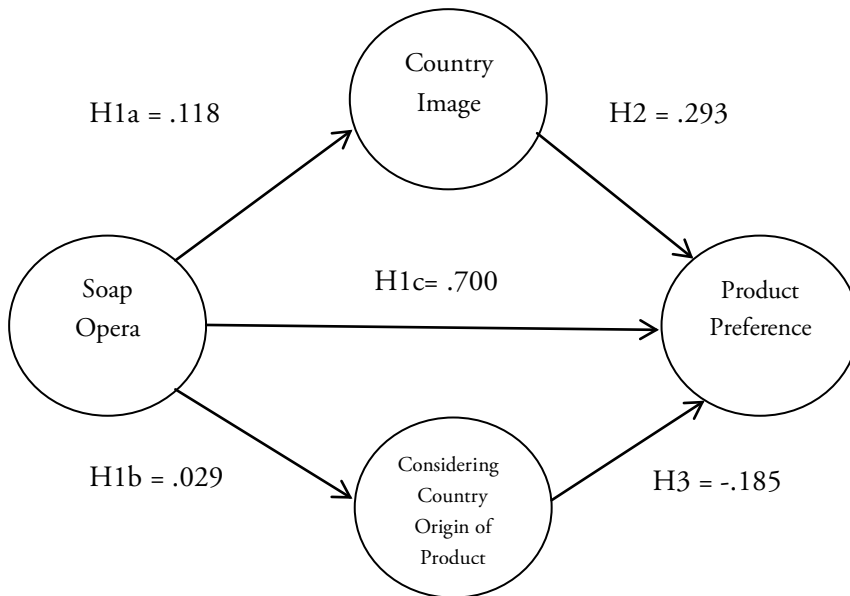
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S5	I like all Turkish serials	3.17	.781
S6	When Turkish serials are broadcasted I don't have any plan to do	2.79	.761
Considering Country Origin of Product		Factor Variance: 6.88%	
O1	I do not prefer products the countries I do not	2.96	.797
O2	The products of some countries not prefer consciously	3.13	.775
O3	I prefer products according to the origin of the country	3.41	.517
O4	Country of origin gives me ideas about products	3.73	.500
Country Image		Factor Variance: 7.40%	
I1	I believe that the products of developed countries are more quality	3.87	.804
I2	I always prefer products of developed countries	3.47	.712
I3	I mostly prefer products of economically developed countries	3.66	.702
I4	I prefer products according to price and quality not to origin of the country	3.97	.507
I5	Country of origin of the product should be respected	3.55	.454
Product Preference		Factor Variance: 16.95%	
P1	After I followed the Turkish serials my ideas have changed positively for Turkish products	2.91	.774
P2	I always prefer Turkish products in shopping	2.65	.770
P3	I have started preferring Turkish products after watching Turkish TV serials	2.76	.728
P4	Before the Turkish serials I have not preferred Turkish products so much	2.59	.613
Total Variance Explained		62.87%	

The total variance of 62.87%, obtained via the exploratory factor analysis (EFA), is regarded as a significant rate in terms of representativeness of the general opinions and this rate should be at least 50% for acceptability of the analysis (Meyers et al., 2006).

The relationship between factors and variables was analyzed using the structural equation modelling (SEM). Initially, we couldn't reach to the model reference values of Goodness of Fit with these EFA variables. So the model was refined by eliminating three items (S5, I1 and I3) that have largest error variances. After removing three items, the test of final measurement model showed a good fit as shown Figure 1.

Figure 1: Conceptual Model



The findings that were obtained in the SEM analysis and that indicated the Goodness of Fit results of the analysis are given in Table 4 while the findings showing the hypothesis results were given in Table 5.

Table 4: Goodness of Fit

Indication	Tested model	Reference values
Chi-Square 1/Degrees of Freedom (χ^2/df)	3.04	0-5 interval

Soap Opera Effect on Product Preferences in Terms of Country Image: A Case of Turkish TV Serials in Albanian Market

Goodness of Fit Index (GFI)	.915	≥.90
Adjusted Goodness of Fit Index (AGFI)	.884	≥.90
Comparative Fit Index (CFI)	.931	≥.90
Tucker Lewis Index (known as NNFI) (TLI)	.916	≥.95
Incremental Fit Index (IFI)	.931	≥.90
Root Mean Square Error of Approximation (RMSEA)	.07	< .08

Source: Meyers et al, 2006; Hooper et al, 2008; Ayyıldız and Cengiz, 2006.

Table 5: SEM Hypotheses

	Hypotheses	St. Errors	β	p values	Results
H1a	Soap Opera → Country Image (CI)	.053	.118	.026**	S
H1b H2	Soap Opera → Considering COO of Product	.028	.029	.304	NS
H1c	Soap Opera → Product Preference	.059	.700	.001***	S
H2	Country Image (CI) → Product Preference	.094	.293	.002***	S
H3	Considering COO of Product → Product Preference	.112	-.185	.098*	S

***p<0.01, **p<0.05, *p<0.10, S: Supported, NS: Not Supported.

The findings obtained via the structural equation modeling indicate that people who watch TV serials of a specific country tend to prefer the products of that country. The most strongly supported hypotheses are the power of TV serials to influence product preferences of consumers and the effect of the country image in product preferences. Also, the hypothesis that TV serials tend to boost the image of the country where they are produced was found acceptable with a 5-percent margin of error. In this context, the increase in Turkey's exports to the countries where Turkish TV serials are followed (Balli et al., 2013) signifies a positive indication of this hypothesis in practice. Likewise, the hypothesis that the country of origin is respected in product preferences was another approach which was found acceptable with a 10-percent margin of error. No correlation was found between watching the

TV serials of a specific country and the checking the country of origin of products in shopping, and the hypothesis was rejected.

Discussion and conclusions

The basic purpose of this study is to examine whether there is correlation between watching TV serials of a specific country and preferring to buy products of that country and find out the potential of TV serials for influencing consumer preferences. The findings of the study indicate that many Albanian consumers have developed positive attitudes toward Turkish products after watching Turkish TV serials. Even 50.8% of the participants said Turkish TV serials are the main factor influencing their decision to buy Turkish products.

In addition to other benefits, TV serials have created a new marketing sphere called destination marketing with which the places where TV serials take place are promoted as touristic locations or holiday resorts to be visited by the audience (Balli et al., 2013; Kim & Long 2012; Busby & Klug 2001; O'Connor et al., 2010). The findings obtained using the exploratory factor analysis and structural equation modeling as well as the hypotheses results indicate that TV serials play a major role in shaping consumer preferences directly or indirectly. The hypothesis that sports a direct correlation between watching TV serials of a specific country and preferring products of that country (H1c) was accepted most strongly (Table 5, $p < 0.01$). The hypothesis that was accepted with the second highest values is H2 that shows the effect of the country image on the product preferences ($p < 0.01$). The finding that TV serials affect product preferences also indirectly is found at the hypothesis H1a, which is accepted in the light of the findings ($p < 0.05$). This is because the regularly watched TV serials of a country tend to have a positive effect on that country's image and they enhance the country image (Cho et al., 2007). Given the fact that H2, which indicates the role of the country image in the product preferences, is also supported, it is clear that TV serials have a direct or indirect effect on consumers' preferring the products of the country where those serials are produced.

The hypothesis, H3, which signifies the impact of the image of the country of origin in product preferences, and which was extensively studied previously (Bilkey and Nes, 1982; Roth and Romeo, 1992; Lampert and Jaffe, 1998; Roth & Diamantopoulos, 2009) was verified in this study as well ($p < 0.10$). However, as no correlation was found between watching the TV serials of a specific country and the

checking the country of origin of the products preferred and the hypothesis H1b was rejected.

To sum it up in the light of the foregoing discussion, the rate with which the TV serials of a specific country are watched is effective in directly or indirectly driving the popularity of the products of that country. Of course, other marketing components, too, should be effectively employed in order to increase the popularity of products of a country. But it is clear that when other marketing components are well-designed, popular TV serials play a critical role in boosting the popularity of the products of the country where those serials are produced as well as enhancing the image of that country.

Implications for managers

That TV serials can play a strong role in facilitating the market penetration of the products of the countries where they are produced has important implications for firms and managers. Given the fact that the places featured in TV serials emerge as potential tourism destinations (Kim & Long, 2012), the products used or consumed in these serials are also advertised. Product placement has today become a widely used advertisement tool (Pervan & Martin, 2002). Thus, product placements in the serials and sponsor advertisements run before and after the serials are recognized as very effective way for ensuring product penetration in the countries to which these serials are exported. Brand managers may choose to focus more on the markets in the countries where the TV serials which feature advertisements and placements of their products are broadcast, and by doing so, they can increase their market share and launch branding efforts in those markets. Likewise, it is generally accepted that women are more resolved and eager to regularly watch TV serials (Stern et al., 2005; Thompson et al., 2000). Thus, the brand managers who sell products specifically geared for women may select TV serials as the media where their products are advertised.

Limitations and future research

This study focused on a topic which has not been intensively studied, but was restricted to a sample group of 413 people due to constraints imposed by lack of resources and time. Still the study's sample size is above 384 people, which is defined as the number for 5-percent margin of error (Balci, 2010) and its sample size is

regarded as 'good' in terms of having 300 subjects and over for factor analysis (Meyers et al., 2006). That the study was conducted solely with Albanians due to lack of resources and costs can be considered as another restriction for the study.

This study focused on the role of TV serials in product preferences, but future studies may choose to examine the product placement approaches by the firms which operate, or plan to operate, in international markets or their tendencies for sponsoring TV serials which have the potential for being exported, with a view to finding out the place and role of TV serials in marketing. Moreover, the potential for becoming successful in foreign markets and the role and effects of cultural proximity between different societies in international marketing are other potential areas for study.

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Fighting Poverty from the Street: Perspectives of Some Female Informal Sector Workers on Gendered Poverty and Livelihood Portfolios in Southern Ghana

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Abstract: *Over the last three decades or so, complex factors including the implementation of neoliberal economic reforms has led to a decline in formal sector employment in the Ghanaian economy. This together with increasing feminization of poverty has driven many, especially young women, to seek livelihoods in the informal sector mainly as hawkers and head porters. Drawing on qualitative interviews with approximately 40 urban poor women (aged 6-25 years), this paper reports the gendered aspects of poverty and the surviving strategies of young women on urban streets. The cameos presented herein highlight the experiences of poverty among street workers and how their livelihood portfolios contribute to overcoming the poor socio-economic conditions facing them. The paper shows that hawking and head portering significantly provides income for upkeep of young women and their families through meeting consumption and other needs. However, vulnerabilities manifested in unfavourable weather conditions, vehicular dangers, exploitation from employers and customers often due to lack of written work contracts are the major risks sturdily connected with these surviving strategies. The paper concludes by arguing for policy interventions such as subsidized credit schemes and organization of formal and informal forms of capacity building for the urban street workers to enhance their livelihoods.*

Keywords: *Hawking; Gendered Poverty; Informal Sector; Surviving Strategies; Ghana.*

JEL Classification: *I32, I14, I31*

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Introduction

Over the past three decades or so, globalization and widespread economic restructuring fuelled by the adoption and implementation of neoliberal economic reforms have facilitated an increase in the growth of the informal employment sector and has also changed the way people are connected to the formal labour market (Bacchetta et al., 2009). At the same time, the world has witnessed increasing political and resource attention to poverty reduction (which is seen as the primary development objective of the century), particularly following the adoption of the Millennium Development Goals (MDGs). Much of the global efforts towards poverty reduction are embedded in the market-based Structural Adjustment Packages in the 1980s and the subsequent Poverty Reduction Strategy Programmes in the early 2000s (Kumi et al., 2014). While private sector-led policy strategies of the neoliberal thinking are making some modest strides in relation to economic growth, the increasing emphasis of reduced role of government in directly creating employments has contributed significantly to the growth of the informal economy of several developing countries (Aryeetey et al., 2000; Bryceson and Pol8tts, 2006).

Ghana has a large informal sector which is said to constitute approximately 90% of its over 7.7 million labour force (Clarke, 2005). This sector consists of varied industries comprising enterprises which are normally categorized as small or medium based on their asset base, number of employees and turnover (Aryeetey, 2008; Osei-Tutu et al., 2010). It has been observed that the implementation of structural adjustment policies have marginalized the urban poor resulting from declines in formal employment and provisions of subsidized social services, and the widening wage gaps between skilled and unskilled employments (Konadu-Agyemang, 2000; Briggs and Yeboah, 2001; Owusu, 2012).

Additionally, the production of agricultural in many rural economies has also been impinged on by the neoliberal reforms as “the growing of export crops divert subsidies, land and labour from traditional subsistence agriculture to the modernized sector while opportunities for nonfarm employment has also decreased” (Briggs and Yeboah, 2001:5). This has not only resulted in driving many urban women to seek multiple and diverse sources of livelihood in the informal sector but has also led to increasingly unceasing flows of young girls from rural areas who migrate with an idealized vision of securing employment in the already choked informal sector in urban areas (Charmes, 2011). A multiplicity of economic activities can be found in the informal sector. In the Ghanaian context, participants of this sector are

essentially low-skilled and are involved mainly in activities such as shoe mending, hairdressing, photography, commercial pay phone services, barbering, mechanical repairs, dressmaking, food preparation and sales, manufacturing and repair work including garment, watch and clock repairs as well as hawking and head portering (Heintz and Pickbourn, 2012). While street hawking and head portering as components of the informal sector contribute immensely to the development of the social and economic lives of people all over the world, systematic research exploring ways through which they contribute to livelihood strategies for urban poor youth remain very inadequate (Awumbila and Ardayfio-Schandorf, 2008; Oberhauser and Yeboah, 2011). This study aims to address this knowledge gap.

This paper examines the gendered aspect of poverty and how hawking and head portering, an informal sector activities serve as livelihoods for urban poor young women in the streets of Kumasi, the second largest city in Ghana. In particular, the paper pays attention to examining the poverty conditions of urban poor women engaged in street hawking and how their livelihood portfolios and surviving strategies contribute to overcoming household poverty. We draw mainly on qualitative interviews with some 10 female head porters and 30 urban poor women hawking to secure their basic needs. We make no claims of generalizability of our data due to the small nature of our sample and as such the findings reported herein should be interpreted with some caution. However, we are particularly interested in learning from young women themselves how they understand and experience poverty as well as how their livelihood portfolios contribute to overcoming the gendered dimension of poverty in urban Ghana.

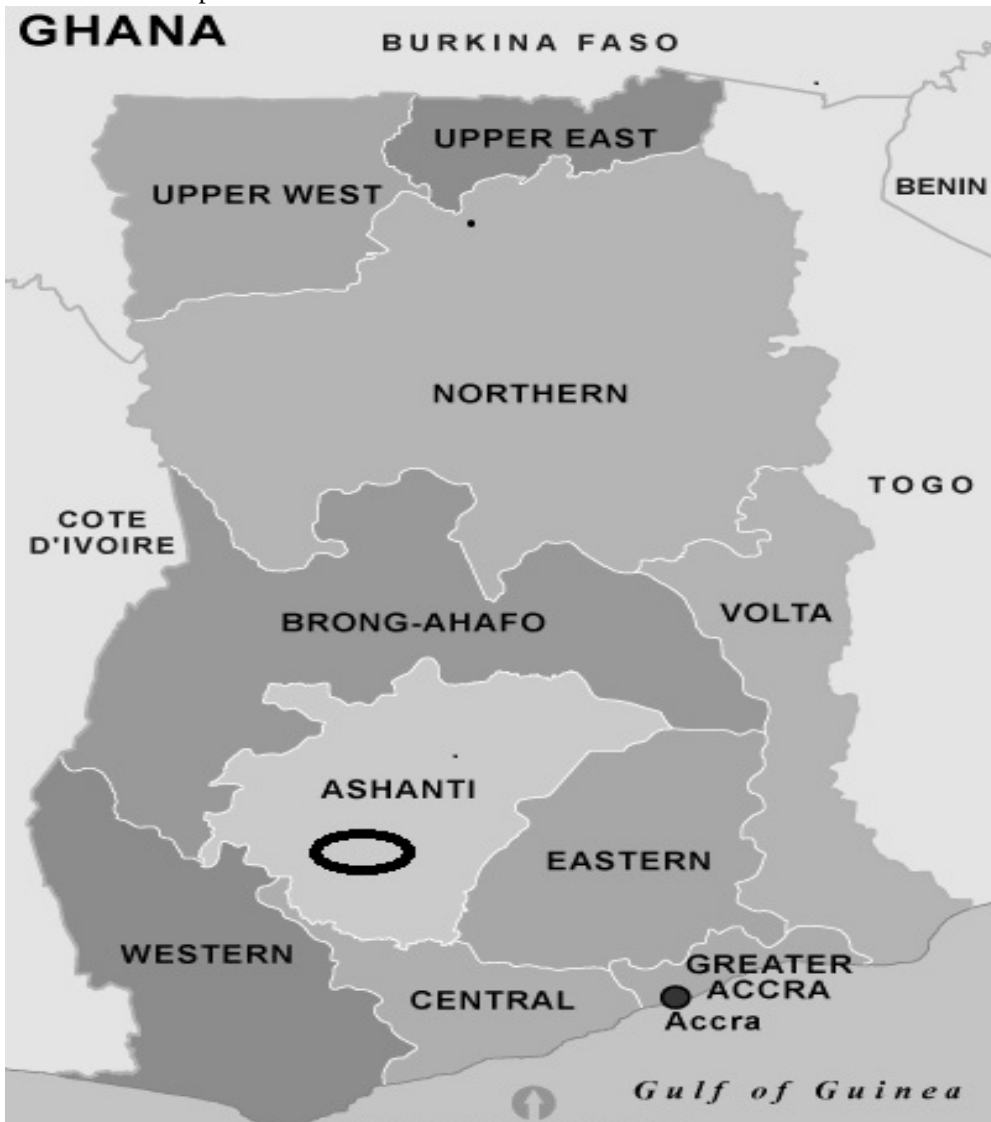
The next section presents a brief literature on head porters and hawkers in Ghana. We then present our conceptual framework/model underpinning the study. This is followed by the research methodology. The findings and discussions of the study predominantly feature in section four while the last section concludes by summarizing our main arguments and its broad policy ramifications for future development.

Poverty, Street Hawking and Head Portering in Ghana: A Short Literature Review

Ghana is a tropical country located on the west coast of Africa. It has 10 administrative regions and 216 decentralized districts. According to the most

recently held Population and Housing Census, in 2010 the country has a population of 24.87 with females accounting for 51.2 per cent and 48.8 million being males. The country is administered by a democratically elected executive president with an elected parliament and independent judiciary. A map of Ghana showing the regional boundaries is shown in figure 1.

Figure 1: Map of Ghana showing administrative regions. The blue area indicates where the field aspect of the research was undertaken



Ghana has made exciting progress in growth and poverty reduction in the last two decades, and has met or has a chance of meeting the MDGs on income poverty and education (Annim et al., 2012). The Ghana Living Standard Survey 5 report shows that poverty rates in Ghana is falling, having fell from 52% in 1991/92 to 28.5% in 2005/06 while extreme poverty rates also fell from 36.5% to 18.2% during the same period (GSS, 2008). It is further argued that between 2000 and 2006, the nation had recorded a 90% rate of progress in halving the number of people subsisting on less than US\$1.25 per day (Coleman, 2012). Additionally, a significant improvement in other non-income related MDG indicators such as gender equality, education and access to safe water has also been recorded in the Nation (World Bank, 2011), and in some quarters, Ghana has been labelled as the 'star' of Africa in terms of poverty reduction and human development (Nicola et al., 2009).

This significant progress achieved in the country has partly been through various (social) policy initiatives by the Government. Archetypal of these include the National Health Insurance Scheme (NHIS) established in 2003 which provides equitable health insurance for all; the Education Capitation Grant (ECG), the School Feeding Programme (SFP), the National Youth Employment Programme (NYEP)¹ which provides jobs for the unemployed and underemployed youth; and the Livelihood Empowerment Against Poverty (LEAP) (Nicola et al., 2009).

However, a cursory look at these policy initiatives shows that the informal sector has largely been sidelined in terms of benefitting from these Governments interventions. As a result, about four of every ten Ghanaians, mostly in the informal sector, still lived in poverty (GSS, 2000). Many of them are young women who work in micro and small enterprises, or finding a survival income as hawkers in the informal economy. Others are also engaged in the agricultural sector, mostly as food crop farmers. Indeed, two-thirds of the working population outside agriculture is active in the informal economy. Many are unremittingly poor, particularly women (ILO, 2004). Amuzu et al. (2010) aptly show that poverty and vulnerability in terms of lack of opportunities in the formal sector and deprivation in Ghana has a gendered dimension. Thus the incidence and severity of poverty in the country are higher among females compared to their male counterparts. Many poor women in Ghana lack access to productive resources and asset. Moreover, many also are confronted by heavier time burden of going about their domestic activities while others have not had the opportunity to complete formal Senior High School. Researchers such as Ardayfio-Schandorf argues that feminization of poverty in the Ghanaian context is rising having risen from 25.7% to 33% between 1960 and 2003 (Ardayfio-

Schandorf, 2006 cited in Amuzu et al., 2010). Thus, it is right to argue that many young women continue to experience the burden of poverty and vulnerability especially female headed urban households in Ghana even though statistics indicate gradual decline in the occurrence of poverty (GSS, 2008; Annim et al., 2012; Coleman, 2012).

Over the past half century or so, street trade hawking and head portering have emerged as surviving strategies for many youth especially in the era where there is virtually little government support for many young women in terms of gaining employment in the formal sector. Street hawking is primarily about selling retail goods directly on busy city streets while the business of head (load) portering involves carrying goods of a customer on heads for a negotiated fee. Head portering is almost entirely practiced by young women and teenagers migrating from the northern to the southern part of Ghana (Awumbila and Ardayfio-Schandorf, 2008). While hawking and head portering are distinct and separate economic activities, it is largely the informal nature of them and frequent engagement with the street that connect the two businesses (Anarfi and Kwankye, 2005). In this study, we have used street hawking and head porters interchangeably due to the fact that large number of the children spoken to also worked as head porters. Usually, it is the economically active youth and in many cases children who move from rural areas to urban areas to engage mostly as hawkers and head porters. For many, these activities provide a source of livelihood as well as opportunities to supplement their families' income although their activities are often done in the most hazardous circumstances.

While a number of factors such as minimal role of government in directly creating employment, the lack of employable skills and rural-urban migration have been identified as the causes of both street hawking and head portering (Aryeetey et al., 2000; Boafo-Asare, 2010), poverty is seen as the fundamental driving cause (Anarfi et al., 2003; Awumbila and Ardayfio-Schanorf, 2008). The gendered nature of street hawking and head portering has been marginally explored by some researchers (e.g. Mitullah, 2005; Awumbila and Ardayfio-Schandorf, 2008). In one comparative study, Mitullah (2005) finds that, the majority of street hawkers are women made up of all marital status groups – the married, single, widowed and divorced.

Head (load) portering is almost exclusively reserved for girls, although the recent times have seen boys/men briskly engaging in it. While both men and women are involved in the activities of street hawking, men tend to join street hawking while young and leave early for other jobs, women join the street trade later in life and

continue. Of course, children of both sexes are now increasingly engaged in both economic activities. In one extensive study, Anarfi (1997) found that more than a third (36%) of street children was involved in street hawking. These children often migrate independently to urban centres for street hawking or begin as hawkers for other people including relatives and thereafter decide to remain on the street to take care of themselves when they could no longer live on the wages paid to them by those they worked for. At present, several city authorities in Ghana including the Accra and Kumasi Metropolitan Assemblies are investing huge resources in evicting street hawkers in particular from the street on the ground that they cause danger, traffic, and obstruction to pedestrians and motorists alike. Whether these eviction exercises will be effective and their implications on poverty are now gaining considerable research attention (Boafo-Asare, 2011), and thus remain outside the scope of this research. In this study, our emphasis has been on highlighting the experiences of poverty among street workers as well as how their livelihood portfolios contribute to overcoming the poor socio-economic conditions facing them.

Conceptual Framework for the Study

Our framework for understanding the poverty conditions and livelihood activities of head porters and hawkers dwell largely on the concept of multi-dimensionality of poverty and the reasons adduced for how peoples participation/engagement in informal work remain an effective strategy in reducing poverty levels. Broadly conceived, poverty - from a macroeconomic policy perspective - has conventionally been measured mainly in terms of income and consumption dimensions with poverty threshold indicators, such as living on less than \$1.25 a day (Kiely, 2005), which have been widely used to define who is poor and who is not as there is a presumed high correlation between income and other measures of human wellbeing such as health status and educational outcomes (White, 2008). This approach is deeply rooted in classical economics of utilitarianism, which conceptualizes poverty primarily in monetary terms and views less productivity and low economic growth as the main structural cause of poverty. This tradition views the causes of poverty from an individual and micro level perspective, arguing that the most influential factor in producing poverty in many economies is low productive capacity of people which results in low income and consumption - and hence low economic growth. However this approach fails to capture other elements of human wellbeing and thus have received criticisms in explaining the nature, causes and extent of people's poverty. Indeed poor people may not always use income in conveying what poverty actually means to them. Gordon et al (2003) for instance argue that setting an arbitrary

income threshold is somehow untenable and would lead to erroneous policy conclusions due to the fact that the extent of people's poverty is not just dependent on income but also on the provision of certain important services, such as health, education, sanitation and vulnerability to shocks.

A new approach which embraces diverse aspect of human wellbeing has therefore emerged. For instance recent World Bank work on the *voices of the poor* together with Sen's philosophical works on capability approach in particular have unequivocally broadened our understanding of poverty and as such poverty has been recognized as a multidimensional phenomenon (Sen, 1999). Poverty in its broader sense is now conceptualized in terms of vulnerability, participation, limited economic opportunities and resources, assets, social exclusion and discrimination (Nayaran et al., 2000; Brett, 2003). Poverty is therefore not just an issue of living on less than \$1.25 a day but in broader sense reflects lack of access to public goods and services including social security and good health; non-ownership of housing or other assets; little or no education and training; and lack of free time for educational activities, recreation and rest (Arriagada, 2005). Sen (1999) for instance makes the point that, poverty is a multidimensional concept describing not just low income and consumption but deprivation of basic human capabilities, resulting in poor health, reduced life expectancy, illiteracy and inadequate access to material and non-material social goods and resources which contribute to improved well-being. This study relied extensively on the multi-dimensional poverty concept which focuses on several dimensions of wellbeing to assess the poverty conditions of the head porters on the streets of Ghana. By this approach, poverty level of people is seen not just in a uni-dimensional manner of income but the combined effect of the political, environmental, social and economic elements (Nayaran et al, 2000).

With respect to reducing the poverty conditions of marginalized groups, participation in informal sector work as been 'recognized as an effective strategy which helps people gain improvement in their living status especially in the era of neoliberalism which has reduced the role that Government could play in providing formal employment for the youth . The theoretical justification for marginalized people especially women participation in informal work is embedded in works of structuralism. Structuralist thinkers argue that people's participation in informal work is central to appreciating vibrant and diverse forms of economic activities (Debrah, 2007). Participation of women in informal work has also been noted to promote entrepreneurial dynamism that has the latent power to generate employment and economic growth as well as income for these groups in meeting

their basic needs (Debrah, 2007). Thus, from this perspective, the marginalized population needs to be empowered through substantial investment and training for them to be engaged in activities in the informal sector in order to engineer growth and development. The paper dwells on this view to ascertain the extent to which females' participation in the informal sector work particularly hawking and head portering is contributing to improving the difficult socio-economic circumstances that confronts them.

Data and Research Methods

The qualitative methods and design was used in conducting this research. According to Sarantakos (2005), the central principles of the qualitative methodology include the fact that its aims are open and explorative; it involves communication between researchers and respondents and its flexibility with regard to choice of research instruments and procedures. The qualitative research methodology is based on certain research foundations and these are: its perception of reality as existing in a naturalist setting, and its interpretive, communicative and qualitative nature (Cresswell, 2006; Denzin and Lincoln, 2005). Creswell (2006) further opines that the focus of qualitative research is based on deriving the meaning participants hold about a problem or issue, not what the researchers bring to the research, nor what writers have concluded in the literature. We employed the qualitative design and methods based on our research aims to understand how head porters and hawkers perceive and experience poverty as well as how their livelihood portfolios contribute to overcoming their difficult circumstances. Our aim for conducting interviews was basically to learn from our respondent's concerning their perceptions about their realities on the street rather than establishing statistical evidence and causal relations (Bryman, 2008; Creswell, 2006; Sarantakos, 2005).

Sarantakos (2005) argues that qualitative research mostly employ semi-structured and unstructured interviews during data collection. In this way, an in-depth semi structured interviews technique was used largely in collecting the data from some 30 female street hawkers who were engaged in selling all sorts of items, including ice water, polythene bags and a range of food stuffs for a period of two (2) months in Kumasi in 2012. Additionally, our sample included 10 head porters (Kayeyei¹) who carried all sort of items on their heads for people who come to do shopping in the Central Business District of Kumasi. Participants were drawn from Kejetia, Anloga Junction, Osei Tutu Bolivad Street and Ofori Krom Junction. Indeed, researching the lives of urban street trade hawkers and head porters may be difficult, resource

demanding and challenging exercise given the busy schedule of these groups who mostly go about their normal business especially during the day. As a result, initial agreement was made with the respondents which allowed us to carry the interviews in the evenings around 5-7pm when most of them are closing from work. Data collected covered the demographic characteristics of the respondents such as their age, educational attainment, gender and ethnicity. The meanings and experience of poverty by these young women together with how their surviving strategies serve as a means to improving their living conditions were also covered in the data collection. Lastly challenges associated with street workers were also collected. Transcripts from the in-depth interviews and field notes were coded and analyzed qualitatively, supported with the quantitative data which were inputted into the Statistical Product and Service Solutions (SPSS) Statistics 20.0. This enabled us to generate percentages for some of the variables. At the same time, content analysis was used to group, compare and examine findings through positioning the results in the lens of similar works conducted in the Ghanaian context.

Gendered Poverty and Livelihood Portfolios of Urban Poor Women: Experience of Street Hawkers

This section presents the results of the study based on field work conducted with participants and drawing on the relevant scholarly works on street workers in Ghana. First the analysis looks into the demographic characteristics of the respondents. We then move on to present the young women's understanding and experience of poverty and how their surviving strategies and livelihood portfolios contribute to overcoming the poor socio-economic conditions that confronts them. We conclude by outlining policy suggestions from Government and other non-state actors for street trade hawkers and head porters in reducing poverty.

Demographic Characteristics of Respondents

The demographic characteristics of the respondents covered in the survey included their age, ethnicity, gender and educational attainment. In terms of age, the respondents sampled aged between 6 to 25 years with majority (42.9%) falling within the age group of 6-18years. This high proportion of respondents in the age category of 6-18 years highlights the youthful nature of people engaged in hawking and head portering. It is important to draw attention to the fact that our sample covered a 6year old girl who was found selling water to support household income. The six year old Maame Ama explained:

„My mother sent me here to come and sell water so that she can use the money to buy my school books and pencil. I come here only after school. Sometimes when I get home in the evening, I feel so tired that I cannot study and do my homework”.

The above narrative from Maame Ama suggests that selling on the street may offer a means for her mother to get money to provide for her educational needs. However, such a decision to push young girls at that tender age to sell on busy urban streets may be exploitative on the part of parents and may also have negative implications on the education and academic performance of children. Additionally, she may be at the risks of vehicular accidents as the streets in the Central Business District in Kumasi always remain busy especially during the day. Another important demographic variable of the respondents is their ethnicity. The ethnicity of the respondents is essential, as it serves as a social indicator of the regional inequities that espouse outmigration from remote areas, especially in the Northern Regions (Oberhauser and Yeboah, 2011).

Almost all the participants surveyed in this study with the exception of about 5 young women, were from the northern parts of Ghana. These young females had migrated from the Northern Regions to Kumasi with the aim of finding a survival strategy given the lack of economic prospects and the inability of their relatives to cater for their school needs which made them dropout of school. Thus the ethnicity covered in the study includes Dagomba, Sisala, Gonja and Mamprusi. Indeed, street hawking and kayayei in Southern urban Ghana, precisely Kumasi and Accra has been reported as an occupational niche for females who migrate from the North to the South (Awumbila, 2007). Gender wise, our focus was on young women. Thus, our survey covered 69% females with the remaining 31% being males. Earlier research had shown that hawking and pottering in Ghana is predominantly a female occupation (Oberhauser and Yeboah, 2011).

In terms of education, none of respondents sampled had attained education up to the secondary level. They were all either primary school goers or drop outs from school. In one study by Awumbila and Ardayfio-Schandorf (2008), it was reported that among street hawkers and porters in Accra, a total of 61% have not had any formal education, 35% have had Primary education while only 5% have attained Junior Secondary School education.

The lack of higher formal educational attainment among these marginalized groups is largely attributed to lack of financial resources and account for the increasingly unceasing flows of young females from rural Northern Ghana to the South to seek multiples sources of livelihoods in the informal sector in the face of declining agricultural and agricultural- related employment in the northern parts of the country.

Poverty: Understanding its Dimensions and Experiences from Young Women's Perspective

Our survey on how street trade hawkers and porters understand and experience poverty points to four main issues. Thus, low income from work, lack of access to productive resources and decent economic opportunities, vulnerability to diseases and the lack of access to and utilization of health facilities (social exclusion) are the main dynamics of poverty as indicated by the young women during our field work.

To begin with, the hawking and head portering business as a means of livelihood for the young females does not require much skill or any huge capital outlay to start. However, some of our respondents (4 young women) who were selling various food items argued to have started their business through bank loans from microfinance institutions. Notwithstanding the little resources needed to commence their activities, it was discovered that low income from work seems to be a common experience among all the street trade workers. Indeed, many of the activities undertaken by young women in the informal sector such as head portering, selling of items and working in shops/restaurants continue to attract low and irregular income (Awumbila, 2007). As illustrated by Kwankye et al. (2007a), poverty among street trade hawkers manifest in low earnings from work which does affect the capacity of these young women to cater for their basic needs. Our survey indicates that, per the experience of poverty among these poor young women, a minimum threshold of US\$1.25 is woefully inadequate for them to be considered not poor.

Similar situation has been recorded by earlier researchers. In their study of reproductive health implications of street hawking in Accra, Kwankye et al. (2007a) sought from hawkers the amount they considered to be adequate for them to meet their basic daily basic needs. Their results point out that more than half of the female hawkers in Ghana suggested an amount ranging between GH¢1.8- GH¢8.66 (US\$0.91-US\$4.33) to be their daily required income in order for them to meet their basic needs. This conflicts with normative understanding of what would be

needed in order to classify one as non-poor as demonstrated in the global hegemonic project. As noted already, mainstream understanding as seen in the MDGs set \$1.25 per day as the absolute poverty line. However, from the perspective of the hawkers and porters, this amount remains woefully inadequate. Thus, income poverty from these young women perspective and their experience 'transcends the international poverty line of \$1.25 a day. This may largely be attributed to the context specificity with regards to the living circumstances. Beyond this, there were concerns about irregularity of income earned from work. In our in-depth, interview a 15-year old Mamuna professed:

“I come here always to sell rubbers. This economic activity I am doing is nothing to write home about. On a very good day I get about GH¢12 (US\$5.6). On bad days I get just GH¢1 (US\$0.46) and sometimes I do not get any while I walk under this scorching sun. Meanwhile, what I am doing is not my own business; I only get more income (commission) from my Madam if I am able to sell more. My income from this work shows that I am poor. The government must come to our help”.

The above statement from Mamuna does not only highlight the difficulty associated with her source of income but more importantly how irregular her income source could be from her livelihood. Indeed, many of the hawkers in the Metropolis sampled mostly do not own what they sell. Many have largely been employed by people who own big supermarkets in the Metropolis and thus get commission from their employers based on how well they are able to sell for these supermarkets. Those hired by shop owners also undertake task such as running errands, cleaning and washing dishes as well as refilling shelves (Oberhauser and Yeboah, 2011). Consequently aside the 4 women who indicated to have started the business through loans suggesting that they own their business, the remaining were employees working for supermarkets. Inability to sell much on the day means that they get little income from their employers. It is imperative however to note that working relationship between these hawkers and their employers is seen as healthy and cordial (Berg, 2007). Moreover, the head porters also argued that in recent times, they find it difficult to get loads to carry, thus, limiting the opportunity for them to earn higher income. A 15 year old who migrated from Northern Ghana to pursue head portering had this to say during a focus group discussion:

“Nowadays, business is not good. Sometimes I do not get any load to carry. This forces me to borrow money from my friends to buy food”. Worryingly, daily earnings are mostly spent on basic necessities, such as food, sanitary

facilities and water with little left for savings (Berg, 2007). In effect, low and irregular income from hawking and portering as experienced by our survey participants is a major dimension of poverty strongly associated with young women working in the informal sector”.

At the same time, the experiences of poverty among female informal sector hawkers evident from our interviews indicate that lack of access to resources and decent economic opportunities remain a key dimension. Indeed, in many contexts, “gendered inequality manifested in unequal distribution of economic resources and power at the intra-household levels are key factors which do push and keep households especially female headed ones in poverty” (Amuzu et al., 2010:20). Interview data suggest that lack of formal, decent and sustainable employment opportunities remain elusive to these poverty-stricken young females. Their exclusion from gaining decent employment has undeniably pushed them to resort to hawking and head portering. Reasons cited by the participants of this study for the lack of decent employment opportunities included their low educational attainment (drop out from school), lack of employable skills and generally, the lack of Government support in creating industries in the formal economy which could have absorbed them.

In Ghana, the major Government initiative providing economic opportunities for young people has largely been expressed through the National Youth Employment Programme (NYEP), which seeks to provide jobs for underemployed and unemployed youth. There is ample justification for focusing on the youth given the high youth unemployment rates in the country, which drives migration of young people from rural areas to Southern cities in search of non-existing jobs (World Bank, 2011). However, given the low level of educational attainment and drop out among these young street trade hawkers and porters, it could be argued that the NYEP largely discriminate against these poorer young women on the street as the programme employs young people with at least Junior Secondary School education (World Bank, 2011). Additionally, the lack of the access to resources has been linked to inequality and socio-cultural practices, as females by the standards of the Ghanaian society are mostly limited when it comes to owning productive resources. This differential access to resources has resulted in the females facing heavy burdens and stressful socio-economic conditions (Oberhauser and Yeboah, 2011).

Added to the lack of resources and economic opportunities, our survey results indicate that vulnerability to diseases and the lack of access to and utilization of

health services is another pathway in which young women working in the informal sector experience poverty. In fact, the youth and mobile populations especially those working as hawkers and porters are considered at higher risk of becoming infected with sicknesses (Garenne, 2003:17). Almost all of our survey participants argued that, the high levels of susceptibility to diseases considerably represent a major dimension of their vulnerability. The major health problems facing the head porters and street trade hawkers include malaria, headache, diarrhea and cholera. This is attributed to the tedious nature of their work and the insanitary living conditions in which many of them find themselves.

Despite the high propensity to falling sick and exposure to risks due to their living conditions, the majority of these hawkers and porters do not take proper medication. In Ghana, the major health intervention initiated by the Government to ensure adequate access to and utilization of health service is the (NHIS). The purpose for implementing the scheme is for the government to cater for health treatment of the aged, the poor as well as children of parents who both subscribe to the scheme (Arhin, 2013). However per the operations of the scheme, , as dependent minors, many of these young porters and hawkers are supposed to be insured by their parents as there is fixed charge of GH¢ 5 (US\$2.28) for processing and registration. Unfortunately, most of them stated that their parents are poor and thus have not been able to afford initial charge. This suggests that these young females cannot be covered under the NHIS as their parents' have failed to provide the amount needed for processing their registration. This means that, they have to be registered on their own and have failed to register. Information elicited indicates that, through the financial assistance of Street Children Development Foundation (SCDF), which is a non-governmental organization; about 3000 head porters in the study area have been registered under the NHIS. Though this initiative is commendable, a lot still needs to be done considering the current estimate of over 30,000 street trade hawkers and porters in Southern Ghana (UNICEF, 2007). Moreover, even those porter girls who have been registered under the NHIS may not be able to utilize public health services. The reason for this could be summed up in a comment by a 14 year head porter, Zenabu:

“I am privileged to have been registered under the NHIS by the SCDF. However I receive little attention from health personnel's when I visit the hospital for treatment when sick because the nurses don't look after me since they say I am wearing dirty dress”.

The above comment highlights some important issues that need careful scrutiny. First it suggests that aside the high propensity of falling sick as a dimension of poverty, many of these young women experience exclusion from mainstream society demonstrated in the lack of attention on the part of health personnel's who are supposed to rather provide protection and security for these young ones. This in effect may reinforce their feeling of powerlessness and ruling out from society. Indeed "poverty is gendered in its predisposing factors, processes and impact and that the ways in which young women experience poverty are related to their position and situation in society" (Awumbila, 2006:17). Additionally, the lack of proper attention from health personnel's when these young porters visit hospital could make them resort to self-medication. Certainly, Kwankye et al. (2007b) have reported that self-diagnosis and self-medication seem to be commonplace among these young women on the street, often relying on friends who have suffered similar symptoms beforehand. Thus, when the porters and hawkers visit the local chemist, they have already determined what they want, and buy the drugs over the counter from shop attendants, who may not ask any questions. Such practices may further complicate the health situation of these hawkers and porters and push them into ever poorer health; most of them seem to be unaware of the implications of this or indifferent to what happens to them.

Overall, it could be argued that poverty among these poor youth hawking and carrying various loads on their heads is a visible condition with manifold manifestations as evident in diverse aspects of their socio-economic circumstances. Nonetheless, generalizing these dimensions of poverty for all informal sector workers would be simplistic, insufficient and problematic. Indeed, the association between poverty and informal sector workers does not hold uniformly across space. This is because the self-employed, particularly micro-enterprise owners, are found to have average earnings far above the minimum wage, allowing an inference, a lower likelihood of poverty among such people (Charmes, 2012). Consequently, in many cases, it might be incorrect to claim that the various dimensions of poverty reported by the porters and hawkers in our study are the defining characteristic of the whole informal sector. Nevertheless, the experiences reported herein have far wider implications for social protection and poverty reduction strategies.

Surviving Strategies and Poverty Reduction

The preceding discussions have highlighted the various dimensions of poverty experienced by young people, finding a survival strategy in urban highways of Ghana. This section presents how the livelihood portfolios of these young people contribute to overcoming their poverty conditions and the difficulty circumstances that confront them. We also highlight the difficulties associated with their surviving strategies. As noted already, the activities undertaken by porters and hawkers require little or no capital to begin. Field observations revealed a considerable degree of the organization of the work undertaken by the street trade workers. Many have adopted the strategy of moving in groups, often providing information on available opportunities for their acquaintances while ensuring that there is no struggle among them in the quest to get a load to carry (Oberhauser and Yeboah, 2011).

Undeniably, many of the street trade workers often do not operate in haphazard manner but in well-defined spaces, largely based on ethnicity (Awumbila and Ardayfio-Schandorf, 2008). This confirms the assertion that the livelihoods portfolios of urban poor street workers are often embedded in social relationships although searching for load to carry is done independently (Berg, 2007). Thus, in their day to day work, ethnic spaces have been developed among specific ethnic groups, serving as a mechanism to avoid any potential conflict. However, not much recognition is given by the porters regarding the load they carry. Thus, in the quest to earn more income, many of these young women give very little or no consideration to their age but take on loads according to their perceived ability to carry the load. The activity undertaken by our participants show considerable gender variations. While the males are able to do multiple sources of activities, females were only confined to transporting goods from shops to lorry stations for customers. Aside carrying loads with trucks, males are also engaged in other activities such as serving as shop assistants, working in restaurants, washing dishes and selling of goods such as coconut and various assorted items. In effect, the activities undertaken by street trade workers is highly gendered with males involved in the remunerative loads while their female counterparts are mostly limited to carrying smaller loads of petty traders and travellers which attract little pay (Awumbila and Ardayfio-Schandorf, 2008). The gendered disparities with males carrying heavier loads and engaging in multiple activities compared to their female counterparts may be attributed to the strong physical strength of the males.

As a way of contributing to poverty reduction and the difficulties confronting the urban poor, particularly the females, hawking and portering serve as a means of earning income. Our survey indicate that, on a very good day, porters and hawkers

could earn on the average between GH¢20-40 (US\$9.11-US\$18.21). However, in bad times, some earn absolutely nothing and had to rely on acquaintances in order to meet daily basic needs such as buying food and water, an indication that earnings fluctuate with the fortunes of the markets and clients. Moreover, earnings also differ with respect to gender. Oberhauser and Yeboah (2011) argue that income distribution among street trade hawkers and porters are gendered as males are able to earn higher income compared to their female counterparts. They show that on the average, females earn between GH¢15-105 (US\$6.83-US\$47.81) weekly whereas the males earn GH¢86-145 (US\$39.16-US\$66.02) per week. Similar situation has been documented by other scholars. In their study of gendered poverty, migration and livelihood strategies of female porters in Accra- Ghana, Awumbila and Ardayfio-Schandorf (2008) found that males earn on the average GH¢3 per day (US\$1.37) compared to GH¢1-2 (US\$0.46-0.91) for the females. "The multiplicity of work by males, together with their ability to enter into long-term arrangements with clients as well as the ability to transport higher volume of goods more efficiently; and therefore serving more clients mainly account for the gender differences in earnings" (Oberhauser and Yeboah, 2011:31). Gender differences in earnings has also been linked to the higher bargaining power and capability of the male workers who are able to bicker payments for the services they render depending on the size and weight of the load and distance to be covered. For the females, payment mostly depend on the kind heartedness of clients who pay any amount they consider suitable (Awumbila and Ardayfio-Schandorf, 2008). This reinforces the argumentation of Beneria (2003), who forcefully maintains that societal perceptions regarding females working in the unrecognised informal sector as ready to settle for any payment for their services often contribute to their exploitation and social exclusion in society.

Notwithstanding the gendered disparities in terms of earnings, overall, income earned from the various activities contribute significantly to reducing the poverty conditions among street workers and their household. Earnings from low paid onerous work help to meeting basic needs. While there were complains of lack of decent sleeping places, it was discovered that food to eat was not a major issue. Many have even adopted the strategy of eating once or twice in order to be able to save from their earnings. Thus, we discovered that hawking and portering serve as means of contributing to household income in supporting other relatives. Significantly too, the porters who are migrants from the relatively poorer Northern Regions argued to occasionally send remittances and other items to their families up North. Participatory and much anecdotal evidence shows that some especially the males are

able to remit in kind and send items such as imported rice, soap and other household provisions to their families up North (Anarfi and Kwankye, 2005). The means through which the porters send these items are basically through relations and other fellow migrants who are going back. Sewing machine, clothes, utensils among other things were the material possessions that have been acquired by the hawkers and porters through income from their work. Some have also been able to open micro- businesses such as selling drinks, food stuffs and home appliances.

Additionally, while some are not able to save any earnings, others manage to save some part of their earnings with the SCDF. In an interview, the director of SCDF argued that about 4000 porter girls were saving some part of their earnings with the foundation at the time of the survey. There is no interest charge for rendering this service to the porters. This informal system through which these young females save their earnings offer the merit of low transaction cost, little bureaucracy and paper works, no interest charge and the flexibility to adjust and ability to get their savings back in times of difficult financial situation compared to the formal banking systems which may require some level of financial literacy (Berg, 2007). This informal system of saving some part of their earnings afforded the porter girls the opportunity to gain access to their money when confronted with any extremely difficult situation when they could receive no assistance from anywhere. It has also afforded many the opportunities to buy material possessions which cost relatively higher such as the sewing machine.

Overall, our findings suggest that hawking and portering significantly serve as an important livelihood strategy (employment and income) engaged by the urban poor particularly females especially in the era of neoliberal economic reforms which has largely limited the possibility for young people to gain employment in the formal sector. Thus, many through hawking and portering continually, are able to meet their consumption needs, acquire material possessions while others have also moved beyond into micro enterprise development, thus directly improving household welfare. Additionally, a good number of porters who migrated from the rural savannah zones to the Southern cities, sometimes without the knowledge of their familial relations, have been able to acquire the needed financial resources in preparation towards their marriage life and transition into adulthood (Kwankye et al., 2007b).

Notwithstanding the potential role of these activities in contributing to overcoming poverty, several factors were identified which serve as great deal of challenge for the

porters and hawkers. Vehicular dangers, insult and cheating from pedestrians and difficulties associated with the vagaries of the weather were mentioned as particularly important factors facing hawkers and porters while going about their activities on the streets. Of particular relevance is the insult and robbery from customers. It was discovered that many of the porters who carry load are given amounts that do not commensurate the load they carry and any attempt to express their dissatisfaction in their own language is often misconstrued as insult, which attract reproach, insult and intimidation. Indeed, head porters and street trade hawkers are liable to face discourteous treatment and insults from customers to whom they render services (Kwankye et al., 2007b). The conflicts, disagreements and quarrels between the porters and their customers is mainly attributed to the lack of clarity surrounding fees charged for carrying loads (Awumbila, 2006). In this way, the lack of standards for hawkers and porters to rate their services in monetary terms and non-existing 'formal structures that protects their livelihoods contributes to their vulnerability in today's broadening marketization' (Oberhauser and Yeboah, 2011:33). Moreover, extremely hot sunny conditions that they are exposed to, causes severe headache among these porters and hawkers who work for more than eighteen (18) hours under the scourging sun. In the evident of rainfall, especially at night, the porters were seen helpless as they do not have decent accommodation. These complexities with regards to the difficulties confronting the livelihood portfolios of young people on the street (hawker and porters) point to urgent policy responses. The next section sums up the study and proposes a set of policy options.

Conclusion and Implications for Poverty Reduction

Our study on the gendered aspect of poverty and livelihood portfolios in Ghana has shown the interlocking dimensions of poverty experienced by young women and how their surviving strategies contribute to overcoming poverty. Growing body of research has shown that economic restructuring following the neoliberal economic reforms and socio-cultural practices largely account for pushing many of these folks to find their livelihoods on urban highways due to their limited access to resources, productive assets and sustainable employment in the formal sector (Oberhauser and Yeboah, 2011).

Poverty reduction strategies have become the cardinal policy focus for several countries including Ghana in recent times. Although poverty is now recognized in many quarters to have a multiple dimensions policy prescription and strategies are still firmly rooted in the idea of money-metric \$1.25 a day aspect of it. One of the

consistent measures to track progress on poverty reduction in the wake of the Millennium Development Goals (MDGs) has been the ability of countries to reduce the number of people living on less than two dollars a day. By 2010, Ghana was already a 'star performer' as far as achieving the MDGs goal on poverty reduction were concerned as, ahead of the target date of 2015, the country was able to have reduced the number of its population living on \$2 a day from 52% in 1991/92 to 28.5% in 2005/06 while extreme poverty rates of those living on about a dollar also fell from 36.5% to 18.2% during the same period (Ghana Statistical Service, 2008; UNDP Ghana and NDPC/GOG 2010; 2012). Yet, as this study shows, poverty has different dimensions which need to be factored into the determination of the progress of poverty reduction effort.

Our study therefore contributes to the growing body of research emphasizing the multi-dimensionality of poverty (Sen, 1999; Anand & Sen, 1997; Nnarayan et al, 2000). The paper demonstrates that poverty is therefore not just an issue of living on less than \$1.25 a day but in broader sense reflects lack of access to public goods and services including social security and good health; non-ownership of assets and little or no education, susceptibility to diseases and social exclusion of the marginalized populations. While income is very important for poor people, it is not the sole determinant to enable them enjoy wellbeing and quality of life. Issues such as access to public goods and resources, creation of opportunities for participation in productive ventures are all determinants of poverty.

Thus, poverty has many facets with multiple manifestations, often revolving around living circumstances and situations. While portering and hawking provide income in meeting consumption and other material needs, it cannot serve as a sustainable means of livelihood given the fluctuations in earnings and the various identified challenges associated with it. We also take note of the fact that, a huge number of people are involved in the hawking and portering businesses thus attempts to bar them from engaging in such activities will be counter-productive. In view of this, the following set of policy options are being proposed in efforts towards improving the situation of street trade workers.

First, this paper adds voice to the calls for more gender-based policies and programmes in livelihood development through the provision of decent and sustainable employment programmes. Government, NGOs and other stakeholders whose mission are consistent with the welfare of the urban poor could come to the aid of these young women by providing decent employment especially in the area of

micro enterprise development. This must be complemented with practical trainings and capacity building programmes which will enable these young people the opportunity to manage their own micro enterprises. Additionally, the Ministry of Women and Children Affairs in Ghana could team up with human right-based NGOs in providing healthcare and safety nets for these young people. Moreover, these agencies could make their offices open or could possibly establish an accessible centre where these young women could seek advice and report any abusive and exploitative act that confronts them.

At the same time, Government could come to the aid of the growing number of hawkers, organize them and provide them with subsidized micro loans in order to help them expand their livelihood portfolios while others could also diversify into more stable income earning activities. There are schemes such as the Micro-finance and Small Loans Centre (MASLOC) and the Hawkers Empowerment Programme, which basically aim at equipping hawkers, head porters and food vendors with skills and start-up capital and to better improve their standards of living and to properly engage them in some economic activity that adds value to the nation needs. Such schemes need to be revitalized and scaled up to reach the throngs of young people finding their livelihoods on urban highways. Of fundamental to the solution of street hawking also lies in the expansion of access to education, skills development and the need to bridge the rural-urban divide which serve as a primary motivation for migration of young people from rural to urban streets. While our recommendations are not necessarily new, we are of the view that they will be accorded with the urgency and the attention they deserve by the respective Authorities mandated to do so.

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i *Kayayei* (Sing. Kayayoo) is the local term for a female porter or bearer from Ghana, and is a person who carries objects for others. The term can be broken down into two words, *Kaya*, meaning load/luggage/goods in Hausa language, and *Yei*, meaning women/females in Ga language, as the role is almost exclusively carried out by females.

ii NYEP is now known as the Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA).

Appendix 1: SURVEY/CHECKLIST ON UNDERSTANDING OF POVERTY, ITS EXPERIENCE AND SURVIVING STRATEGIES AMONG HEAD PORTERS IN GHANA

This is an interview guide scheduled to assess the perceptions, understanding, causes and experience of poverty as well as how the surviving strategies of head porters and hawkers working in the informal sector contribute to overcoming their poverty conditions in Kumasi, Ghana. The researcher would be very grateful if you could provide answers to these questions. All information given shall be treated confidentially.

Part One: Demographic Characteristics of Respondents

1. Sex (a) Male (b) Female
2. Name of respondent.....
3. Age of respondents.....
4. Educational level (a) Primary (b) JHS (c) Drop out d) No formal education
5. Where do you come from? a) Northern region b) Upper east c) Upper west (d) other

Part two: Understanding of poverty and its experience among informal workers

6. What is your understanding of the term poverty?
7. Based on your living situation, how would you rank living conditions?
a) Very poor (b) poor (c) non-poor (d) rich
8. Can you explain the reason for your answer?
9. How does poverty manifest in your life?
10. What are the various difficulties facing you here?

11. What has accounted for your poor living situation?

Part three: Surviving strategies and livelihood activities

12. What kinds of activities are you involved in here?

13. How long have you been hawking here?

14. How many hours do you spend on the street daily?

15. On the average, how much money are you able to make in a day?

16. In what ways do your activities contribute to improving your living circumstances?

17. How does the activities you do help you and your family?

18. What are the major challenges facing you here while hawking?

19. What do you think should be done to improve upon your business?

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